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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Casey Unlimited
Reverse Twists

Stories of the Week

College football coaches *en masse* are pessimistic-for-the-press at the start of every season. As the all-time champ we give you Buddy Kerr of Dayton university.

"If any of my backfield candidates," he wept in September, 1958, "make first string, we're in trouble."

From out of nowhere a youngster barged into a Yankee tryout camp. Neither Casey Stengel nor his scouts had ever seen him before, but Ol' Case liked the way he handled himself in the field.

"We might use you on one of our Class C or D farm clubs," Casey opined.

"That's all right with me," countered the unheralded kid. "I'll sign for $1,000 a month."

"Sonny," Stengel stengelled, "I just noticed something. You're too tall."

Casey Unlimited

Breathlessly, we trust, you've been awaiting another "Dope" devoted to America's National Pastime. And whom do you like in the World Series?

Fellow sports, we have a treat for you: the exact testimony before a Congressional Investigating Committee uttered by circumlocutious Casey Stengel.

In the carefully-considered opinion of qualified literary critics, what follows is the greatest bit of native American humor delivered since Mark Twain.

You'll read just what Casey said, as taken off a tape-recorder. Incidentally, this tape is one of "Dope's proudest possessions.

Here we go:

"I HAVE BEEN up and down the ladder. I know there are some things in baseball, 35 to 50 years ago, that are better now than they were in those days. In those days, my goodness, you could not transfer a ball club in the minor leagues Class D, Class C ball, Class A ball.

"How could you transfer a ball club, when you did not have a highway? How could you transfer a ball club, when the railroads then would take you to a town you got off and then you had to wait and sit up five hours to go to another ball club?

(Continued on Page 8, Col. 1)

Typhoon Bows 1959 Line, Sales Program

WASHINGTON, D. C. — A "Golden Anniversary Line" of air conditioning equipment and a "Golden Rule" sales program have been introduced at a national sales conference held by Typhoon Air Conditioning Co., Div. of Hupp Corp.

The 1959 Typhoon line features new styling in the "compact, modern, square look" for self-contained units up to 15-ton capacity, a new 15-ton hermetic compressor for larger units, fully redesigned low side units, and an economy line of air-cooled condensers, the company said.

The line and the sales plan are called "Golden," Typhoon officials explained, because of

(Concluded on Page 29, Col. 3)

Ebersman Heads Mathes; Starnes Sales Chief

FORT WORTH, Texas—Benjamin Eberaman has been elected a vice president of Glen Alden Corp. and president of its Mathes air conditioning division, it has been announced recently by officials of the corporation.

Robert Starnes has been elected a vice president and general sales manager of Mathes.

Ebersman is a former president of the Hemphill Corp., Pawtucket, R. I., leading manufacturer of full fashion knitting machinery.

Starnes has been with Mathes in a sales capacity since its inception.

Mathes produces room air conditioners, packaged residential air conditioning, and heat pumps.

Augenstein, Ogden Appointed In Major Move at Airtemp

Plan New Products, Stronger Distribution

DETROIT — The recently-announced appointment of Paul M. Augenstein as president of Chrysler Corp.'s Airtemp Div., succeeding C. E. Buchholzer who resigned along with three other top executives, was described by a Chrysler official as "the initial step in a dynamic and aggressive new program" for Airtemp.

Group Executive Charles B. Gorey, Jr., who heads the corporation's Special Products group, termed the appointment "a major move to accelerate the development of new Airtemp products and strengthen its sales and distribution organization."

PAUL M. AUGENSTEIN (left) and Joseph B. Ogden were recently named respectively president and vice president in charge of sales at Chrysler Corp.'s Airtemp Div.

Augenstein, who has been general manager of General Electric Co.'s room air conditioner activities for the last three years, in turn announced the appointment of Joseph B. Ogden as Airtemp's vice president in charge of sales.

Ogden has been general manager of Whirlpool Corp.'s air conditioning division since March, 1957. He will be directly responsible for expanding and strengthening Airtemp's dealer and distributor organization, Augenstein said, adding:

"He also will have an important role in product planning and in the development of entirely new merchandising pro-

(Concluded on Page 29, Col. 1)

Lincoln Larkin Succeeds Ogden At Whirlpool

ST. JOSEPH, Mich.—Promotion of Lincoln M. Larkin to general manager of the air conditioning division of Whirlpool Corp. has been announced by director of marketing Jack Sparks.

Larkin has been product manager for air conditioning since joining Whirlpool in 1955 when Seeger Mfg. Co. was merged with Whirlpool. Before that he was a regional sales manager for air conditioning with General Electric Co.

Larkin succeeds J. R. Ogden, who has resigned as general manager of air conditioning and vacuum cleaners to join Airtemp. Vacuum cleaners will not be part of Larkin's responsibilities, but will be included among products handled by the refrigeration division, managed by S. E. Sweet.

Also moving up in the Whirlpool organization is John F. Zubrod, currently based in Evansville, Ind., as assistant product manager. Zubrod now becomes product manager for air conditioning with headquarters in St. Joseph. He has been with Whirlpool since 1956 when he left Servel, Inc.

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Mitchell Studies Future Plans For Air Conditioning Equipment

CHICAGO—Future plans for Mitchell air conditioning equipment are now under study and final product decisions will be made some time this month, according to J. W. Alsdorf, president of Mitchell Mfg. Co., a division of Cory Corp.

Each year, as its fiscal year ends Aug. 31, Mitchell "reviews operating results for the past year, evaluates the general industry situation and other economic factors, and then determines plans and product line for the next season.

"The management and board is presently reviewing these various elements and will make a decision some time in October as to what our future plans are for Mitchell air conditioning equipment," Alsdorf said.

"We are presently finalizing plans for a new line of Mitchell dehumidifiers and expect to be in production on these products before the end of the year. We are also considering the advisability of adding other new air treatment appliances to the Mitchell line but have at present formulated no final decisions in this respect.

"We hope to complete our discussions and make final product decisions by the end of October."

NEXT WEEK . . .

Beginning in next week's issue the NEWS will resume the popular articles on "Servicing Automobile Air Conditioners." This new series will include service data on makes not previously discussed as well as valuable information about 1958 models of makes described in the earlier articles.

RACCA Convention Opens Oct. 12 In Colorado Springs

CLEVELAND — The three-day 13th annual convention of the Refrigeration & Air Conditioning Contractors Association will get under way Sunday, Oct. 12, at the Broadmoor hotel in Colorado Springs, Colo.

A feature of the convention will be two clinics designed to provide an exchange of problem solving techniques and ideas and to develop closer relationship and cooperation among members.

The clinics will be led by Dean Michael Kolivosky of Hillsdale (Mich.) college. He will use the "Phillips 66 Method" that allows everyone an opportunity to express his views.

One clinic, set for Monday morning, Oct. 13, will cover local association progress. The other, scheduled for Tuesday morning, will be on associations and mergers.

To start off the second clinic, RACCA President C. A. Walling, Wilbur Hokom of the National Association of Plumbing Contractors, William Moody of the Mechanical Contractors Association of America, and others will present pros and cons of mergers.

(Concluded on Page 29, Col. 2)

Board Gives Reasons For Actions on Proposed Changes In L. A. Code

LOS ANGELES—Reasons for accepting or rejecting revisions to the proposed Los Angeles heating, ventilating, and air conditioning code were outlined recently by the Board of Building & Safety Commissioners.

The proposed code has been sent to the City administrative

(Concluded on Back Page, Col. 1)

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9 Talks Set for Educational Conference To Be Held In St. Louis Oct. 9 to 11

ST. LOUIS—Nine talks on a variety of subjects have been scheduled for the 10th annual educational conference of the Midwest Association, Refrigeration Service Engineers Society.

The conference will be held Oct. 9-11 at the Sheraton-Jefferson hotel here. In addition to the talks, there will be two question - and - answer periods and a soldering contest.

Registration will start Thursday afternoon, Oct. 9. The conference will be called to order at 9 a.m. Friday. The morning program includes welcoming remarks by John E. Dube, president of Alco Valve Co., on behalf of the Air-Conditioning & Refrigeration Institute, and S. Nill Mohler, Jr., president, R. E. Thompson Co., on behalf of the Air-Conditioning & Refrigeration Wholesalers.

Educational presentations are scheduled as follows:

FRIDAY, OCT. 10

10 a.m.—"Servicing Motor Capacitors and Relays," Chester Curry, St. Louis.

11 a.m.—"Pitfalls In Insulating Air Conditioning Systems," Charles F. Gilbo, Research & Development Center, Armstrong Cork Co.

1:30 p.m.—"Installing and Servicing Controls for Heating and Cooling Systems," J. Roy Wheeler, General Controls Co.

2:30 p.m.—"Maintenance Contracts," Orin Hutchins, Carthage, Mo.; James Manahan, St. Louis.

3:30 p.m.—Question-and-answer period.

4:30 p.m.—Soldering contest sponsored by Mueller Brass Co., W. W. (Bill) West, conductor.

SATURDAY, OCT. 11

9 a.m.—"Problems Associated with Electrical Distribution Systems," Ernest A. Fischer, Union Electric Co.

10 a.m.—"What Happens to a Heating System When Cooling Is Added," Walter Weiss, product application engineer, American Furnace Co.

11 a.m.—"Automobile Air Conditioning," C. Dale Mericle, associate editor, Air Conditioning & Refrigeration News.

1:30 p.m.—"The Relationship of Servicing and Installation Practices to Factors Affecting System Stability," John Bopp, manager, technical services, Refrigeration Sales Dept., Ansul Chemical Co.

2:30 p.m.—"What the Manufacturer Expects of You, What Your Customer Expects of You, and Your Responsibility to Your Customer," Gene Hamilton, service manager, Worthington Corp., East Orange, N. J.

3:30 p.m.—Questions and answers.

Mitchell Cleared In Hoover Patent Suit

CHICAGO—Mitchell Mfg. Co. has been cleared of infringing an air conditioner patent held by the Hoover Co. of North Canton, Ohio.

Federal Judge Win G. Knoch ruled that six claims of Patent No. 2,391,869 were invalid because they were non-inventive. It is this patent that Hoover claimed was infringed.

Marginal Sales To Be Highlight Topic at NCRSA Miami Beach Convention Nov. 17

PHILADELPHIA — When should the commercial refrigerator distributor accept and when should he reject the marginal sale?

A panel discussion of that question will highlight the 12th annual convention of the National Commercial Refrigerator Sales Association.

The convention is slated for the Golden Gate hotel in Miami Beach, Fla. from Nov. 17 through Nov. 19.

Details of the three-day program were released recently by Marie Lawton, executive secretary of the association. Convention theme is "Selling Profitably Today."

The panel discussion on the marginal sale, by two manufacturers and a distributor, will highlight the first day's activities.

On Tuesday morning, Nov. 18, convention delegates will be seated at tables of 10 with a group chairman to exchange ideas on the best means of cutting costs and handling problems in delivery, installation, and servicing; hiring, training, compensating, and directing salesmen; engineering and store planning; and diversification of lines.

A final panel discussion on Wednesday will bring two more representatives of manufacturers and a distributor to offer suggestions on "Keeping Salesmen Informed and Inspired."

In addition to the discussions, seven addresses are scheduled for Monday and Wednesday.

On Monday, Harry Hattenbach, NCRSA president, will lead off the convention program with an address on "The Future of the Distributor."

Milton I. Schwartz, NCRSA first vice president, will follow, telling how to "Organize for Growth."

E. B. Ward of Baker-Ward, Inc., South Bend, Ind., will give a "Formula for Selling to Customers Who Buy or Think There is an Advantage in Buying Direct."

On Wednesday:

Wilbur S. Hoyt of Lecompte, La. will talk on "Making Your Capital Work for You to Best Advantage."

Donald D. Denny of Dayton, Ohio will discuss "Creating and Selling New Customers On Complete New Stores."

Don V. Petrone, president of Typhoon Air Conditioning Co., will describe "The Role of Air Conditioning in the Modern Supermarket."

Bernard Stevens, president of Stevens Markets, Inc., Miami, will tell why "I Bought Direct —Now I Buy From a Distributor Because. . . ."

All convention sessions are scheduled for morning, leaving afternoons and evenings free, according to the announcement.

Planned social events are limited to an early birds' cocktail party Sunday evening and Hawaiian Luau music and entertainment on Tuesday evening.

New San Diego ASHAE To Be Installed as 73rd Chapter Oct. 15

SAN DIEGO, Calif.—The new San Diego Chapter of the American Society of Heating & Air-Conditioning Engineers will be installed Wednesday evening, Oct. 15, at Mission Valley Inn.

ASHAE President E. R. Queer of University Park, Pa., will present the charter to this 73rd chapter. First Vice President Arthur J. Hess of Los Angeles will present the minute books, and Wesley O. Stewart of Los Angeles, director of Region 4, will present the gavel.

In accordance with ASHAE custom the youngest chapter, which is the Southern Alberta chapter in Calgary, provides the gavel for the incoming San Diego chapter.

More than a quarter of a century of experience has made H & H a leader in the fabrication of small and intricate parts. Brass and copper sizes range from .072" O.D. through 2½" O.D.; aluminum, from ⅛" O.D. through 1½" O.D.; steel, from ½" O.D. through 1" O.D.

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The Imperial is General Electric's premium quality furnace! It combines all the finest safety, engineering and design features:—famous cast-iron "Pinpoint" heat exchanger for quicker, more economical heat—General Electric's unmatched ten-year warranty—simplified wiring—quiet performance—rugged construction—two-tone gray styling. No need to hide this handsome furnace—it's as smart as an ultra-modern kitchen appliance. Smallest unit takes only 21"x30½" of floor space. Better still! The Imperial easily "grows" into year 'round General Electric Whole-House Air Conditioning. BTUH input: 90,000 to 210,000, upflow—75,000 to 150,000 downflow.

NEW *Custom* LINE

Ideally priced for the builder market and for the profitable modernization and replacement market. Smallest unit takes only 15"x28" of floor space. Minimum clearances approved by A.G.A.: sides, rear and combustible flooring, zero clearance—front and flue, only 6"—above plenum, only 1". Ideal for closet installation. Simplified wiring, quiet blower, advanced cast-iron burner design, "Thermal-Trap" heat exchanger with ten-year warranty. Priced competitively to profit you. Two types—one for normal heating and air conditioning; one for above-average cooling loads. Both types "grow" into year 'round Whole-House Air Conditioning. BTUH input: upflow and downflow, 75,000 to 150,000.

OPERATION upturn — Build sales and jobs in '58 — GENERAL ELECTRIC

OPERATION UPTURN means General Electric will go all out to accelerate an upturn in business in 1958. It will help boost dealer sales and profits. So get in on the ground floor! For complete details of OPERATION UPTURN and a General Electric franchise, call your nearest General Electric Heating and Air Conditioning distributor—listed in the yellow pages of your phone book—or mail coupon. General Electric Company, Air Conditioning Department, Tyler, Texas.

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Thermal Supply, Inc. Acquires Assets Of United Supply of San Antonio

HOUSTON, Texas — Thermal Supply, Inc. here has acquired the assets from the partnership that owned United Supply of San Antonio, as well as the branches in Austin, Corpus Christi, Harlingen, McAllen, and Victoria, Texas, it was announced by Elmer K. Peterson, Thermal Supply president.

Thermal Supply, Inc. is the parent company and wholly owns all of the corporate subsidiaries, it was pointed out. In addition to the cities listed above, these subsidiaries are located in Houston, Beaumont, Galveston, and Monroe and Shreveport, La. Two additional subsidiaries are Thermal Rental and Thermal Agency.

Corporate officers of the parent company, in addition to Elmer Peterson, are Winston C. Peterson, executive vice president; Alex Trevino, vice president; William F. Hauber, merchandising vice president; and Tom E. Gossett, secretary-treasurer.

Trevino is president of the United group and Elmer Peterson is president of the Thermal group, it was noted.

"Centralized control and purchasing will be concentrated in Houston," the announcement said. "Its central location and facility will best serve all of the subsidiary groups.

"Thermal Supply of Houston is housed in a building having 125,000 sq. ft. so that physically it will be possible for the most part to ship inventory from that point as required by the subsidiary locations.

"No major change in either the personnel or the manufacturers represented is anticipated."

The combined companies with 11 warehouse locations will cover an area which includes all of Louisiana, except Baton Rouge, New Orleans portion, and all of east, south, and southwest Texas.

Honeywell Acquisition

MINNEAPOLIS — Minneapolis-Honeywell Regulator Co. has purchased Marion Electrical Instrument Co. of Manchester, N. H.

Paul B. Wishart, Honeywell president, said the acquisition, made through an exchange of stock, places Honeywell for the first time in the field of measuring and indicating panel meters.

Detroit ASHAE, ASRE To Discuss Merger Oct. 13

DETROIT—Proposed merger of the American Society of Refrigerating Engineers and the American Society of Heating & Air-Conditioning Engineers is the subject for a joint meeting of the local ASRE and ASHAE groups on Monday evening, Oct. 13, at the Rackham Memorial building.

Speakers will be F. L. Tarelton, manager of refrigeration engineering for Hotpoint Co. and a member of the committee on cooperation for the proposed merger, and James N. Livermore of the Detroit Edison Co. and a member of the ASHAE national council.

The meeting, which will start at 8 p.m., will be preceded by a dinner at 6:30 p.m. Dinner reservations must be made by Thursday, Oct. 9.

Kronauge Named Coolerator Sales Vice President

ALBION, Mich.—William G. Kronauge has been named vice president in charge of sales for Coolerator Div. of McGraw-Edison Co., it was announced by M. F. Beisber, Coolerator president.

Kronauge

Kronauge will be responsible for the sales development program and act in an advisory capacity to the president.

Formerly room air conditioning planning manager of Kelvinator, Kronauge brings to Coolerator 22 years of diversified experience in the refrigeration and air conditioning industry. He was a Frigidaire district manager prior to joining Kelvinator as commercial manager of the firm's Chicago branch in 1944.

Kronauge has been active in industry associations and has recently been appointed chairman of the Membership Committee of the newly-formed NEMA room air conditioner section.

Drayer-Hanson Sales Up 29%

LOS ANGELES — Sales of Drayer-Hanson air conditioning and refrigeration equipment for August zoomed to a high of 29.4% over the like 1957 period, according to Harold T. Hunt, general manager.

The company is a division of National-U. S. Radiator Corp.

For the fiscal month concluded Sept. 21, sales orders booked soared to the highest monthly dollar volume of business in the entire 48-year history of the firm's Air Conditioning & Refrigeration Div., Hunt added. A 54.6% increase is reported for the period, over 1957.

The company reported for October - November - December, 1957, a sales increase of some 27% over 1956. "If trends continue," Hunt stated, "we'll topple that figure, too!"

Sales of air conditioning and refrigeration at Drayer-Hanson are under the jurisdiction of C. W. Pollock, manager of Air Conditioning & Refrigeration, and William Keichline, assistant sales manager.

A separate department at Drayer-Hanson, the Industrial Div., headed by Sam Nelson, is devoted to the manufacture of heat-exchange equipment used by the oil, chemical, and other basic industries. This division reported that for the fiscal month ended Sept. 21, shipments were up 120% over the corresponding period a year ago.

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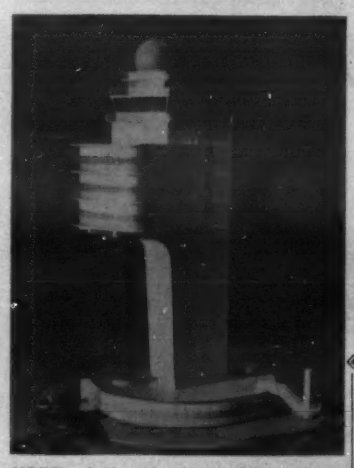
Suniso 3G is available in two grades . . . improved regular and new dual inhibited.

Control Tower Ductwork To Follow Round Contour of Building



MODEL of Newark Airport Control Tower now under construction by The Port of New York Authority. The air conditioning system for the unusually designed structure is being installed by Hudik-Ross Co., Inc., mechanical contractor.

* * *

NEW YORK CITY—A contract to install air conditioning, heating, and ventilating equipment for the new $1,750,000 Control Tower at Newark Airport has been awarded to Hudik-Ross, Inc., mechanical contractor, the firm announced.

The 150-ft. concrete tower, now under construction by the Port of New York Authority, will incorporate the most advanced design and equipment features yet devised for an airport control tower, the announcement said.

The air conditioning facilities in the tower will serve a dual purpose, according to Frank Hudik, president of the mechanical contracting firm.

In addition to providing comfort cooling for the Civil Aeronautics Administration personnel who control all air traffic at the airport, the system is designed to provide constant temperatures that will insure accurate operation of delicate electronic, radar, and weather equipment the year around.

The high velocity system with centrifugal compressor manufactured by The Trane Co. will provide a cooling capacity of 100 tons. The mechanical contract was awarded to Hudik-Ross by Carl Buhr, Inc., general contractor for the Port Authority on the project.

"An unusual feature of the system will be the shape of the ductwork and piping which will follow the generally round contours of the uniquely-designed building," it was pointed out.

"The first floor of the tower, where the cooling equipment will be housed, will be a perfect circle in shape, with a diameter of 78 ft. The cooling tower, completely hidden by the design of the structure, will be located on the first floor roof.

"A concrete shaft enclosing an elevator, stairways, and utilities will extend upward 117 ft. At the 65-ft. level it will support three office and equipment floors in a cantilevered overhang.

"Above these floors will be the control cab and related electronic and radio equipment rooms. At the very top, a circular radome, 17 ft. in diameter, will enclose a rotating radar antenna equipment room."

Hudik-Ross, "one of the few fully integrated mechanical contracting organizations," will also install the plumbing equipment in the tower. The firm has its own steamfitting, refrigeration, service, and engineering divisions, and operates a complete sheet metal and pipe fabrication shop.

A. Gordon Lorimer, architect, designed the tower, and Slocum & Fuller is the mechanical and electrical consulting engineer for the architect.

Despite Protest

Detroit Common Council Approves Low Bid on Convention Hall Job

DETROIT — After hearings were held following filing of a protest against the low bid, Common Council unanimously approved awarding the mechanical contract for Detroit's new convention hall to the Stanley-Carter Co. of Dearborn.

The company had submitted a low bid of $4,175,000. The R. L. Spitzley Heating Co. here, second lowest bidder at $4,180,000, had contested the contract award on the ground that some of the subcontracting would be done by an outstate firm, violating specifications.

According to legal opinions by the corporation counsel's office, the low bid was valid because the subcontractor for sheet metal work, the Robert Irsay Co. of Skokie, Ill., promised to use Detroit labor to fabricate and install the sheet metal work.

Following the hearings before the Civic Center Commission and the corporation counsel, the City Council voted 8 to 0 in favor of the contract award.

For Your Reprint Copy

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- Guaranteed exceptionally low moisture content.
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GENERAL CHEMICAL DIVISION

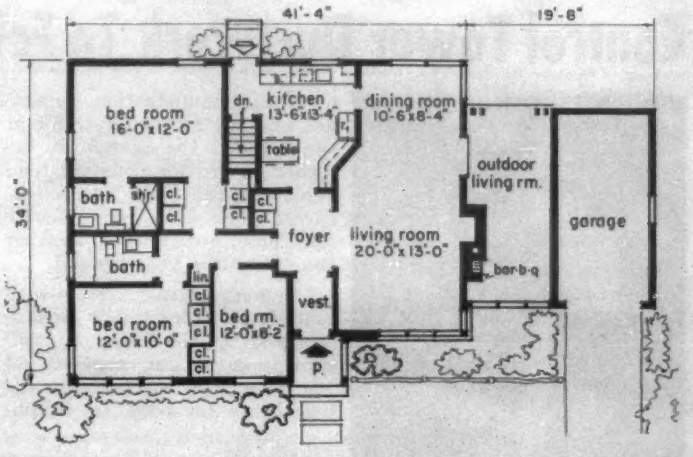
40 Rector Street, New York 6, New York

How Maximum Insulation Cuts Cooling Costs Shown by Frigidaire and Mueller Climatrol

NEW YORK CITY — New studies by two air conditioning equipment manufacturers, Frigidaire and Mueller Climatrol, bear out previous research showing that houses insulated far beyond FHA minimum requirements can be cooled better, frequently at less over-all cost to the builder.

The results of the studies give builders and homeowners a practical, economic way to follow the guidance of the "mortgage credit philosophy" directive in which FHA announced its intent to encourage the inclusion of air conditioning in homes. This directive, issued at the beginning of the year, recognized that "within a few years any house that is not air conditioned will probably be obsolescent. . . ."

ARTIST'S rendering of house studied by Frigidaire and Mueller Climatrol to calculate savings in air conditioning possible with maximum use of insulation.



FLOOR plan of house used in insulation studies. Duct layouts devised independently by Frigidaire and Mueller Climatrol were both perimeter systems and followed essentially the same pattern.

2 Firms Asked To Specify System

Frigidaire and Mueller Climatrol were given the plans of a 1,340-sq. ft. ranch house designed by architect Rudolph A. Matern and asked to specify air conditioning systems for the house with thick insulation and with minimum insulation. They were also requested to estimate monthly operating costs under both insulation conditions.

Thick insulation was considered to be 6 in. of mineral wool or the equivalent in the ceiling and 3 in. in sidewalls. One-and-a-half inches in the ceiling only was figured as the insulation in the "minimum" house. The cost of the difference between minimum and thick insulation was figured as 10 cents per sq. ft., a total of $232.50. Builders often can install insulation for less, making this a maximum figure.

For each study, the house was assumed to be in a different part of the country. Thus a comparison of the two studies is not valid, because of the differing climates and utility rates.

The house is of standard frame construction. Exterior walls consist of No. 2 shiplap sheathing, 15-lb. building paper, and red cedar shingles. The interior finish is ½-in. gypsum wallboard. The conventional gable roof is covered with pastel-gray asphalt shingles. The ceiling is ⅜-in. gypsum board. The attic is unfloored and is ventilated. All windows except those in the front, which faces north, are shaded by awnings.

With Thick Insulation 2-Ton System Sufficed

In both studies, thick insulation reduced the calculated heat gain of the house to a point where a 2-ton cooling system could be used instead of a 3-ton system. In one case, the savings made possible by the use of smaller equipment more than paid for all but $21.83 of the extra insulation.

The two studies bear out the conclusions reached by Prof. John R. Watt of the University of Texas at the Air Conditioned Village in Austin. Prof. Watt, chief analyst at the village, found that thick insulation brought about an annual average operating savings of $80.35 in the eight air conditioned houses he studied at the village.

He also found that the money saved by using a smaller heating-cooling system in the eight houses was, in all except one case, more than enough to pay for additional insulation.

For the Frigidaire study, the Matern house was assumed to be in a New England area with a medium daily temperature range, average humidity conditions, and an outside design temperature of 95° F. Frigidaire engineers calculated the heat gain of the house with minimum insulation as 30,390 B.t.u.h. They specified the following 3-ton air-cooled cooling equipment: CARW compressor-condenser, CBW-300 blower coil, thermostat, control relay box.

The retail price of this equipment is $1,173.71. Estimated monthly operating cost, based on a low-step electricity rate of 3 cents per kwh, is $16.89 per 100 hours.

With thick mineral wool insulation, the heat gain was calculated at 22,790 B.t.u.h. and the following 2-ton air-cooled equipment was speci-

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fied: CARW-200 compressor-condenser, CBW-200 blower coil, thermostat, control relay box.

The retail price of this equipment is $934.04, a savings of $210.67 (almost 18%) in first cost over the 3-ton set-up. Net additional cost to the builder (extra insulation less equipment savings) is $21.83. Estimated monthly operating cost is $12.30 per 100 hours, a reduction of $4.59.

Frigidaire points out that the capacity of its 2-ton equipment, 25,450 B.t.u.h., more accurately fits the heat gain of the thickly insulated house than the capacity of the 3-ton system (40,440 B.t.u.h.) does the heat gain of the house with minimum insulation. This should make for better humidity control.

Sacramento, Calif., a city with a medium daily temperature range, average humidity conditions, and an outside design temperature of 100°, was stipulated as the location for the house in the Mueller Climatrol study. Here, the initial savings in equipment was more than 26% in the thickly insulated house. Operating cost for 200 hrs. per month, shrank 18%.

With minimum insulation, Mueller Climatrol calculated the heat gain as 37,638 B.t.u.h. and specified the following 3-ton air-cooled equipment: #918-30 condensing unit, #919-20-3 coil package. The retail price for this equipment is $1,017. Monthly cost for 200 hours of operation was estimated at $12.67, based on an electricity rate schedule that averages out to 1.3 cents per kwh. in Sacramento.

With the thick mineral wool insulation, the heat gain was 26,031 B.t.u.h. and the following 2-ton air-cooled equipment was specified: #918-21 condensing unit, #919-20-2 coil package.

The approximate retail price of this equipment is $745, a savings of $272 over the 3-ton system and a net savings to the builder (after deducting the cost of the added insulation) of $39.50. Monthly operating cost for 200 hours is an estimated $10.35, a savings of $2.32.

Mueller Climatrol said the heat gain for the house with minimum insulation was more than the capacity of the 3-ton air-cooled equipment and the heat gain for the thickly insulated house exceeded the capacity of the 2-ton air-cooled unit.

Water-cooled equipment, with its slightly greater cooling capacity, was not specified, however, because of the high water rate and sewer tax and the ever-increasing water shortage in the Sacramento area. Instead, the manufacturer suggested double glazing of windows to decrease the heat gain slightly.

$40,000 Research Home Will Be Built at U. of Illinois by IBR

URBANA - CHAMPAIGN, Ill. —A new $40,000 research house will be built at the University of Illinois by the Institute of Boiler and Radiator Manufacturers, it was announced here recently.

It will be the second house built at Illinois by the IBR for steam and hot water heating and air conditioning research under actual home conditions. The first, built 18 years ago, will be sold.

The new tri-level research house will have 8 rooms 2½ baths, and 1,800 sq. ft. of usable space. In keeping with modern homes, it will have large glass areas.

Hot water radiant baseboard heating—which was given its first tests in the old house—will be used in the new one, along with a 3-zone chilled water fan-coil cooling system. Walks and drives will have snow-melting coils cast into them.

Three hundred temperature-reporting thermocouples will be built into and installed in the new house's structure, heating and cooling systems, and rooms. Five miles of wire will connect them with a control panel of instruments for observing and recording temperatures.

First research will deal with comfort problems of the popular split-level home, use of large glass areas, and zone control of temperatures. Like many other new homes, this will be located in an open area without shade or wind-breaking trees.

The house will have three bedrooms, kitchen, dining room, living room, den, recreation room, and double garage. Walls will have removable plywood walls for easy access to pipes and wires.

Lower level of the house will be of brick, and upper level vertical siding. The house will be completely furnished and occupied by research workers on the IBR project. It is to be finished by the end of the year.

Dr. Thomas Bedford To Present Paper at 65th ASHAE Meeting

NEW YORK CITY — Dr. Thomas Bedford, director of the Medical Research Council's Environmental hygiene research unit, London, England, will deliver a paper at the opening session of the 65th annual meeting of the American Society of Heating & Air-Conditioning Engineers in Philadelphia, Jan. 26-29.

The paper is "Researches on Heating and Ventilating in Relation to Human Comfort." Dr. Bedford will participate in a topical session on comfort along with Dr. Nello Pace, Dept. of Physiology, School of Medicine, University of California, and Prof. Burgess H. Jennings, director of Research, ASHAE Research Laboratory, Cleveland.

After the annual meeting and 14th International Heating and Air Conditioning Exposition, Dr. Bedford will proceed to several lecture engagements in this country. He also plans to visit the ASHAE Research Laboratory to consult with the staff on the ASHAE comfort studies there, and to speak before the ASHAE Illinois Chapter in Chicago.

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20 models between 1 and 3 horsepower — high, medium, and low temperature — with capacities ranging from 4650 to 37,500 BTU.

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Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1, Col. 1)

Senator Kefauver: "Are you prepared to answer particularly why baseball wants this bill passed?"

Stengel: "I would have to say at the present time, I think that baseball has advanced in this respect for the help. That is an amazing statement for me to make, because you can retire with an annuity at 50 and what organization in America allows you to retire at 50 and receive money?

"I am not a ball player that is put into that committee. At my age, and I have been in baseball, well, I will say I am possibly the oldest man who is working in baseball. I would say that when they start an annuity for the ball players to better their conditions, it should have been done, and I think it has been done.

"Now on the road we only get possibly 27 cents. I am not positive of these figures, as I am not an official."

Senator Kefauver: "I am not sure that I made my question clear."

Stengel: "Well that is all right, I am not sure I am going to answer yours perfectly either."

Kefauver: "I was asking you, sir, why it is that baseball wants this bill passed."

Stengel: "I would say I would not know, but I would say the reason why they would want it passed is to keep baseball going as the highest paid ball sport that has gone into baseball and from the baseball angle."

Kafauver: "How many players do the Yankees control?"

Stengel: "I will tell you: I hire the players and if they make good with me I keep them without any criticism from my ownership."

Senator Langer: "What do you think is the future of baseball? Is it going to be expanded to include more clubs than are in there at the present time?"

Stengel: "I think every chamber of commerce in the city that anybody would change a franchise, I think they will be delighted because they have a hard time to put in a convention hall or to get people to come to your city and if it is going to be like Milwaukee or Baltimore, I think they would want a major league team."

Langer: "What do you think of pay-as-you-go television?"

Stengel: "To tell you the truth, if I were starting in it myself I would like to be in that line of business, as I did not think they would ever have television and so forth here, but they have got it here now."

Langer: "You believe the time is ever going to come that you will have pay-as-you-go in the World Series, which would be kept from the public unless they had a pay-as-you-go in their home?"

Stengel: "I think you have got a good argument there and it is worthy of you to say that."

Langer: "Is there any provision made whereby these owners can keep a racketeer out of the baseball business? Can the baseball owners of the New York Yankees sell out to anyone who may want to buy the club at a great big price without the consent of the other owners?"

Stengel: "That is a very good thing that I will have to think about, but I will give you an example. I think that is why they put in as a commissioner Judge Landis, and he said if there is a cloud on baseball I will take it off, and he took the cloud off and they have only had one scandal, or if they had it is just a one majority.

"How can you be a ball player and make 25 ball players without it being heard?"

Langer: "I want to know whether you intend to keep on monopolizing the world's championship in New York City?"

Stengel: "I got a little concerned yesterday (in the All-Star game) in the first three innings, when I say the three players I had gotten rid of and I said when I lost nine what am I going to do and when I had a couple of my players, I thought so great of that did not do so good up to the sixth inning, I was more confused

"But I finally had to go and call on a young man in Baltimore that we don't own and the Yankees don't own him, and he is doing pretty good, and I would actually have to tell you that I think we are more the Greta Garbo type now from success."

Senator O'Mahoney: "Are the minor leagues suffering now?"

Stengel: "I would say they are."

O'Mahoney: "Why?"

Stengel: "I don't think anybody can support minor league ball when they see a great official. It would be just like a great actress or actor had come to town. If Bob had come here, or Greta Garbo over there, half of them would go to see Greta Garbo and half Bob Hope.

"But if you have a very poor baseball team, they are not going to watch you until you become great. And the minor leagues now with radio and television will not pay very much attention to minor league ball players.

"Softball is interesting, the parent is interested; he goes around with him. He watches his son and he is more enthusiastic about the boy than some stranger that comes to town and wants to play in a little wooden park with no facilities to make you be interested. You might rather stay home and see a program."

O'Mahoney: "How many players did the 16 major league clubs have when you came in?"

Stengel: "At that time they did not have as many teams. Later on Mr. Rickey came in and started what was known as what you would say numerous clubs, you know, in which I will try to pick up this college man, I will pick up that college boy or I will pick up some corner lot boy. And if you picked up the corner lot boy maybe he became just as successful as the college man, which is true.

"Now too many players is a funny thing, it costs like everything. I said just like I made a talk not long ago and I told them all when they were drinking and they invited me in, I said you ought to be home. You

(Concluded on next page)

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Inside Dope

By GEORGE F. TAUBENECK

(Concluded from preceding page)

men are not making enough money. You cannot drink like that.

"They said: 'This is a holiday for the Shell Oil Co,' and I said 'Why is it a holiday?' And they said 'We did something great for three years and we are given two days off to which the Yankees play the White Sox.' But they were mostly White Sox rooters.

"I said, 'You can't take all those drinks and all even on your holidays. You ought to be home and raising more children, because big league clubs now give you a hundred thousand for a bonus to go into baseball.' "

O'Mahoney: "What I am trying to find out, is how many players are actively working for the major league teams now as was formerly the case?"

Stengel: "You are right. I would honestly tell you they naturally have more and they are in more competition now."

O'Mahoney: "Do you think that the farm system keeps any players in the minor leagues when they ought to be in the majors?"

Stengel: "I should say it would not keep anything of any I have been telling you a falsehood."

O'Mahoney: "Is it not a fact that while the population of the United States has increased tremendously during the period that you have been engaged in professional baseball, the number of major league teams has not increased?"

Stengel: "Well, you have that from the standpoint of what you have been reading. You have got that down very good."

O'Mahoney: "I am trying to get it down from your standpoint as a 48-year-man in baseball."

Stengel: "That is why I stayed in it. I have been discharged 15 times and rehired. So you get rehired in baseball and they don't want a good ball player leaving. And I always say a high-priced baseball player should get a high salary just like a moving picture actor."

O'Mahoney: "You are not changing the subject, are you, sir?"

Stengel: "No. You asked the question and I told you that if you want to find out how minor league baseball is, it is terrible now. Now how can you travel in a bus all night and play the next night to make a living?"

Senator Carroll: "Then what is the need for legislation, if they are getting along all right?"

Stengel: "I didn't ask for the legislation."

To which "Dope" would like to append: We hope this testimony sets back Senate Investigating Committees for a long time.

Reverse Twists

First time Bubbles Hargrave faced Dizzy Vance, the Brooklyn fireballer knocked him unconscious with a beanball. Hargrave recovered, and rapped out five-for-five.

Next day Bubbles walked over to the Dodger bullpen and handed Vance a baseball.

"Hit me again, will you?" he chuckled.

An indefatigable belter of the bottle and the ball was Paul Waner. He did both simultaneously and successfully.

On a day when Pat Malone was slated to pitch for the Cubs, Waner begged him:

"Please don't throw anything close to me today. I gotta terrible hangover, and you might kill me on account of my eyes are blurred."

Sympathizing, because he was a pretty good hand at the happy juice himself, Pat complied. So what happened?

Waner struck out, singled, doubled, and finally tripled home the winning run.

Buffalo Forge Dividend

BUFFALO — Directors of Buffalo Forge Co. have declared a dividend of 35 cents a common share, payable Oct. 20 to stockholders of record Oct. 8. The company paid a similar amount in February, May, and August.

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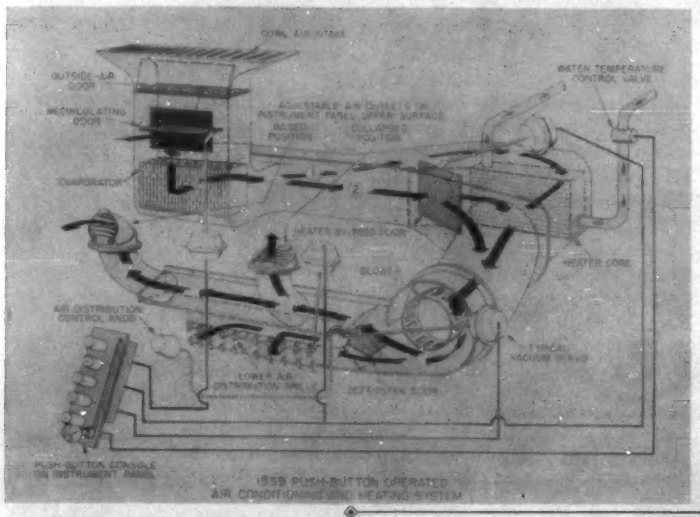

1959 PUSH-BUTTON OPERATED AIR CONDITIONING AND HEATING SYSTEM

JUST PUSHING a button will make the inside of the car as cool as a north woods vacation spot (or as cozy as a fireside) with Chrysler Corp.'s new combination air conditioning and heating system available for the 1959 models. Pushbuttons take over the work of levers and control knobs. The new Airtemp air conditioning system not only chills the air but dehumidifies it as well, the firm points out.

DETROIT—A 10% increase in cooling capacity plus more effective air distribution is claimed for Airtemp air conditioning units designed for the 1959 automobiles of Chrysler Corp.

With its greater capacity, the new Chrysler Airtemp car air conditioner chills the air so rapidly it removes up to 70% of the moisture and then warms it to the temperature selected by the driver, the company says.

SWIVEL-TYPE CURVED OUTLET USED

It adds that cool air from the air conditioner is distributed more effectively than ever before in the forward area of the car by two new swivel-type curved outlets mounted on the top surface of the instrument panel.

The elbow-shaped outlets telescope out of the instrument panel so that cool air may be directed according to the desires of the driver and passengers.

Air is distributed simultaneously to both sides of the car and along the floor area by a divided air duct below the instrument panel.

FIVE PUSHBUTTONS

To control the air conditioner, five pushbuttons are located to the right of the instrument group on all five lines of cars. They are arranged vertically on the Plymouth and Imperial and horizontally on the Dodge, DeSoto, and Chrysler.

Control buttons are designated "Off," "MC" for maximum cooling, "FC" for fully dehumidified fresh air control, "DEF" for defrost, and "H" for heat.

These controls automatically set the blower fan, open and close the damper as required, and activate the entire system to maintain the degree of coolness the driver selects by moving the small slide-lever alongside the pushbuttons.

For normal driving conditions, the driver need only push the "FC" button and adjust the temperature control lever.

Exceptional air conditioning capacity is available for the station wagons and sedans with extra-large passenger compartments and glass areas.

In station wagons, a ceiling-mounted rear compartment cooling element with four cool air outlets is offered in addition to the front-end unit.

Dual air conditioning units are available for large sedans and limousines when additional cooling is desired. These units have air discharge outlets on the rear window ledge as well as on top of the instrument panel.

Air Conditioned Fishing Barge May Anchor In Lake Houston

HOUSTON, Texas — C. F. Mann has asked the Houston City Council for permission to construct and anchor an air conditioned fishing barge in Lake Houston.

The barge would be 40 by 100 ft., with a 16-ft. wide, 85-ft. long fishing well. It would be anchored 150 ft. from shore, accessible from shore by a 6-ft. pier, and would be open 24 hours daily, Mann told the council in presenting his request.

Anglers could sit in easy chairs in air conditioned comfort around the large opening in the barge floor and fish while watching their favorite television programs.

Councilmen referred Mann's proposal to City Utilities Director J. M. Nagle and Parks Director Gus Haycock for investigation and recommendation.

Dallas Church Chapel Air Conditioned

DALLAS — Texas Refrigeration & Engineering Co. here had the contract for air conditioning the Chapel of the First Baptist church in Brownfield, Texas.

Previously, the sanctuary and education portion of the building was air conditioned by Texas Refrigeration.

The company, owned by Frank M. Angus, has installed the "TRECO" system in over 100 churches throughout Texas, it was reported.

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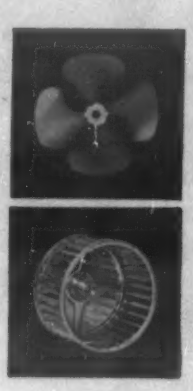

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Still Working Only at Edges of Market

70% of Commercial, Industrial Establishments Not Air Conditioned, Petrone Reminds Dealers

WASHINGTON, D. C.—After a decade of fantastic growth in commercial and industrial air conditioning, the industry is still working only at the edges of the market, an industry executive said here recently.

Don V. Petrone, president of Typhoon Air Conditioning Co. and of the Air-Conditioning & Refrigeration Institute, cited a recent survey which revealed that only 30% of the nation's commercial and industrial establishments are air conditioned.

He cautioned Typhoon dealers here for a national sales conference that real gains in the remaining market will be made only by a well-defined marketing approach.

"Air conditioning the remaining 70% will be completed only when businessmen are convinced that air conditioning is a business necessity instead of a 'fringe benefit,'" Petrone said.

He added that emphasis on comfort used in selling residential cooling units might actually leave the impression that commercial air conditioning is a luxury, and deter sales by obscuring the economic advantages.

A certain amount of industry growth, Petrone admitted, is inevitable because virtually every new store, office building, or hotel is air conditioned. But the industry's greatest opportunities lie in improving marketing efforts directed toward existing establishments and industrial companies, he said. Only 23% of the nation's commercial buildings and 12% of its factories are fully air conditioned, it was stated. Partially air conditioned establishments bring the total to 30%.

"New commercial establishments are built with air conditioning because their builders know that air conditioning pays off in higher sales and profits," Petrone said. "Economic advantages must also be emphasized in approaching the rest of the market. But even the economic advantages must be divorced from spectacular claims," Petrone added.

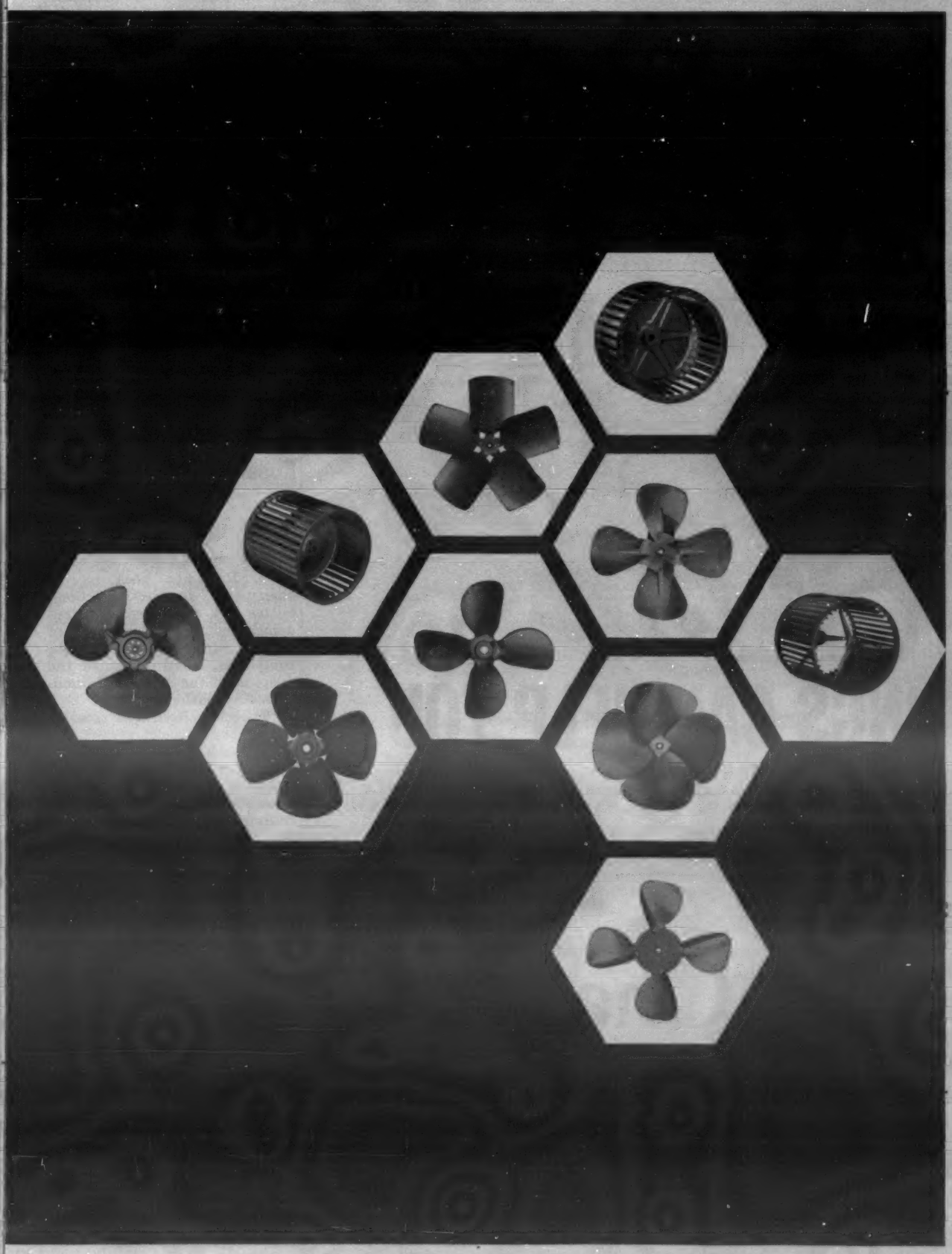
Speaking of industrial air conditioning, he said, "Although every study made shows that air conditioning a factory will boost productivity 15 to 25%, we will be better off talking about the minimum increase necessary to pay for air conditioning."

In most cases, this is less than 2%, he stated. Increased efficiency of only 0.85% is necessary to pay for air conditioning in a new office building, only 1.3% in a new factory, and only 1.5% in an existing factory, according to Petrone.

Petrone said that the industry's growth was slowed very little by the recession. New shopping centers and supermarket operations allayed the effects of cut-backs in other areas.

Those companies and installers who were able to concentrate sales efforts toward air conditioning of new buildings for retail stores, particularly food stores, have hardly felt the recession, Petrone stated. Typhoon's sales of the type of equipment used in these installations actually went up during the recession period, he pointed out.

The meeting at which Petrone spoke was part of the conference at which Typhoon introduced its "Golden Anniversary Line" for 1959. The Brooklyn company entered the air conditioning business 50 years ago by installing huge fans up to 22 ft. in diameter in the roofs of theaters, it was noted.



Air Conditioned Office Building Completed In 48 Hrs.

LONGMONT, Colo.—C. W. Wells, head of C. W. Wells Air Conditioning Co. here, took part in an unusual project when the Longmont Chamber of Commerce built a new masonry office building in under 48 hours.

Wells not only sold the air conditioning and heating equipment for the 60 by 30-ft. building, but donated the services of three installation mechanics and made a cash contribution as well.

Designed to "put Longmont on the map," the furiously-paced building project was begun early in the morning on Sept. 15 and finished Sept. 16, the last of the new furniture being carried in just before midnight.

Despite a heavy rain which fell during most of the night work, a total of from 60 to 80 men built the building from flat ground to a lighted, heated, finished structure in less than 48 hours.

NAPC To Hold 1959 Meeting In Miami Beach

WASHINGTON, D. C.—The National Association of Plumbing Contractors will hold its 77th annual convention in the brand new Miami Beach Auditorium June 1-4, 1959, John M. Rhoades, president, has announced.

The auditorium has been under construction for more than a year and was scheduled to be completed by Oct. 1. It is completely air conditioned.

Joseph A. Rafferty Dies

PHILADELPHIA—Joseph A. Rafferty, 64, former manager of General Electric Co.'s distributing branch here, died recently of a heart condition after an illness of several weeks.

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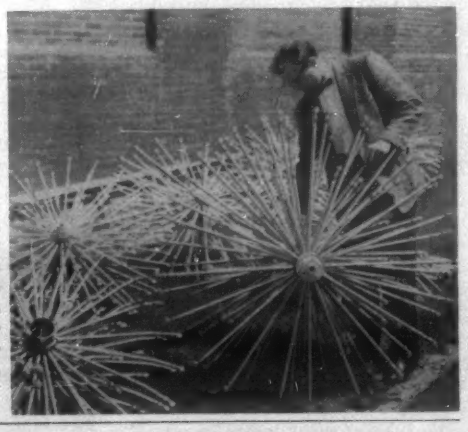


THESE SPIDERY figures may look like giant fluffs from cottonwood trees, but actually are spray assemblies used in industrial air conditioning units made by Carrier Corp. Harry Barbrey, air conditioning engineer for Woodside Mills, a textile plant in Greenville, S. C., inspects them prior to installation. The sprays set up a small hurricane which cools and cleans the air removing lint and other airborne particles. The air is then delivered to the manufacturing areas.

Lear To Have Dust-Free Assembly Areas

GRAND RAPIDS, Mich. — Two super-clean 100% air conditioned and dust-free precision instrument assembly areas totalling about 23,000 sq. ft. will be incorporated in the new manufacturing building being constructed here by the Grand Rapids Div. of Lear, Inc.

When the building is completed next May, Lear expects it to be one of the cleanest precision assembly plants in the aircraft and missile industry.

At Medicinal Chemistry Labs

Air Conditioning Aids Search for New Drugs

CINCINNATI — Search for new drugs is being carried on in air conditioned comfort at the recently dedicated Medicinal Chemistry Laboratories of the Wm. S. Merrell Co., pharmaceutical manufacturer here.

The $1 million building is heated and cooled year around by a York packaged compressor, condenser, and water chiller of 120 tons' capacity. It is supplemented by a perimeter baseboard radiation system based on a Bell & Gossett water heater and circulating pump.

Separately air conditioned is a counting room adjacent to the radioisotype laboratory where a 3-hp. Carrier "Weathermaker" maintains a constant temperature and humidity level at 75° F. and 50% r.h.

The 14,000-sq. ft., single-story structure is divided into 10 2-man organic research laboratories, a radioisotype laboratory, instrument room and special equipment room, glass blower's room, utility and storage rooms, conference room, office of the head of organic research, records office, a literature chemist's office, and organic chemistry laboratory, according to the announcement.

A feature of the building is the two-man module laboratory, product of almost 20 years of experiment, observation, and study. It is particularly adaptable to Merrell's type of research, where two or four persons may work together on a single project. The two-man module offers both the advantages of comparative privacy and the safety and liaison of group study. It is also economical in building construction as the basic unit is repeated 10 times.

For air conditioning purposes, the building is partitioned into north and south temperature control zones. One 60-ton York air handling unit provides 100% fresh air to the laboratories. Air is exhausted by Penn Domex exhaust fans located in each module.

Another 60-ton unit supplies conditioned air to the offices. Here 25% outside air and 75% indoor air is used. Office areas are divided into zones with thermostatic control in each zone.

Mechanical Contractors, Inc., Cincinnati, provided the plumbing, heating, insulation, ventilation, air conditioning, and fire protection equipment.

This includes a ¾-hp. York compressor for an 8 by 8-ft. walk-in box for storage of chemicals and specimens. The low temperature box was installed by Breeding Insulation Co. of Cincinnati.

Johnson Service Co. provided the controls, including an outdoor solar compensator which automatically calls for cooling to compensate for the sun's radiant heat load. The compensator is located on the south side of the building.

A 120-ton Marley cooling tower is used with the York system.

American Standards Association Names Robert H. Swoyer, Sr.

NEW YORK CITY — Robert H. Swoyer, Sr., mechanical engineering department, Pennsylvania Power & Light Co., Allentown, Pa., has been elected chairman of the Sectional Committee Z74, concerned with fundamentals of performance of effluent air and gas cleaning equipment, operating under the auspices of the American Standards Association.

"The committee was recently established to develop performance standards that would permit the measuring of the comparative effectiveness of air cleaning equipment and dust collectors of different makes," the ASA pointed out.

Swoyer represents the American Society of Mechanical Engineers on Sectional Committee Z74. The ASME and American Society of Heating & Air-Conditioning Engineers are co-sponsors of the ASA Z74 project.

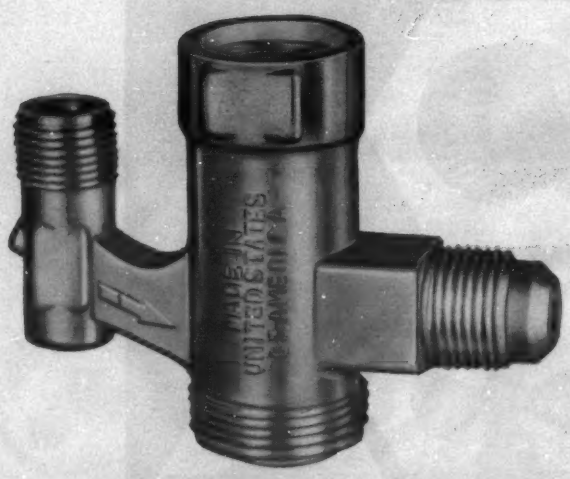
Welsh Plant Will Be Air Conditioned

UNION SPRINGS, Ala.—The Welsh Co. of St. Louis, manufacturer of some 156 different items, is locating a branch plant here.

Plans call for construction at Union Springs of a 200 by 200-ft. air conditioned building, with spur railroad track, at a cost of about $225,000.

IF YOU MAKE

REFRIGERATION VALVES



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Heating & Cooling With Water

Results of Research over Past 18 Years Summarized In U. of Illinois Report

A cooperative research program in steam and water heating and summer cooling has been carried on at the University of Illinois since 1940. This program has been carried out under the terms of a cooperative contract between the Institute of Boiler & Radiator Manufacturers and the University of Illinois Engineering Experiment Station.

A summary outline of some of the results of the research has been compiled by W. S. Harris, M. D. Eide, and R. D. Barkman of the University of Illinois. Since this concise and informative material may prove useful to those involved in installations of this type of equipment, the summary is being published in a series of instalments in the NEWS.

1. Winter Heating

Gravity Hot Water

1. Object: To investigate the operation of a gravity hot water system with boiler and radiators on same floor level and with boiler at floor levels 1 to 3 ft. lower than radiators; the hot water supply located 7 ft. above the floor and the radiators connected in parallel; the supply riser connected at the top of the radiator and the return at the bottom.

2. Results:

a. The operating heads obtained when the boiler and radiators are located on the same floor level are quite small, 200 milinches and less per circuit.

b. Since the available head increases with the length of the run, it is advisable to use a direct return system.

c. Use as tall a radiator as possible in order to increase the operating head.

d. For best circulation, the supply main should be insulated from the boiler to the highest point above the boiler and the remainder of the supply main left uninsulated.

e. The return main should be insulated.

One-Pipe System

1. Object: The tests were undertaken to determine the operating characteristics of a gas-fired, one-pipe steam system using small-tube radiators equipped with non-vacuum venting valves when operating under actual use conditions. Other purposes were to observe the effectiveness of the adjustable radiator vents in balancing a system and to observe the effect of opening the valve on a cold radiator upon the water levels in the boiler and in the return mains.

2. Results:

a. The radiator venting rate had no appreciable effect on the floor-to-ceiling temperature differentials.

b. It was observed that some improvement in room temperature balance could be obtained by increasing the radiator venting rates in the rooms which are cooler.

c. No appreciable effect on the seasonal fuel consumption resulted from changes in venting rates or increasing the fuel burning rate from 100 c.f.h. to 135 c.f.h.

d. It was observed that under normal operating conditions about 3.5 minutes elapsed between the time the thermostat started calling for heat and the time the first steam was generated in the boiler. Approximately another 5 minutes elapsed before steam entered the radiators. The length of the average burner on-period was about 18-20 minutes. At no time during a normal operating cycle did the radiators attain an average temperature of 212° F.

e. The over-all operating efficiency of the steam system in the I-B-R Research Home was about 68.5% at an indoor-outdoor temperature difference of 34° F.

f. The observations of water levels in the boiler and the return mains indicated very erratic conditions. In general, however, there was no appreciable increase in the water level in the returns at any time except for a very short period after the opening of the radiator valve on a cold radiator equipped with a fast venting valve, and when the system was under a steam pressure of approximately 2 p.s.i.g. Under this condition the water surged upward in the returns about 6 in. above the normal level.

(To Be Continued)

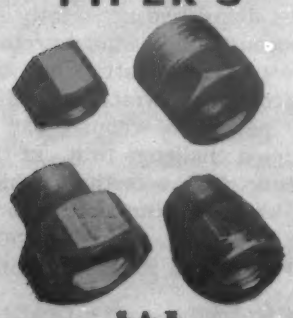
California Contractors Asked To Show 'Case of Missing Comfort' Film

SAN FRANCISCO—Tips on how to get the best use of the new 12-minute, 16mm. sound-on-film, full-color motion picture produced for Warm Air Heating Institute of Northern California, have been sent to contractors, manufacturers, and jobbers.

The letters ask cooperation in showing the film, known as the "Case of Missing Comfort," to as many people as possible.

The request is made that WAHINC supporters arrange for showings in their own trade area, check with every service club, and the chamber of commerce for audiences. Architects, contractors, and other industry groups will benefit from the film, WAHINC points out.

PIPER'S



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SO HALSTEAD & MITCHELL ENGINEERS SAID:

When Gross Profits Depend on Refrigeration...

Over 50% of the gross profit of the average supermarket comes from refrigerated items. Naturally, the refrigeration system has to be *dependable* . . . which is why so many supermarkets specify Halstead & Mitchell *Cleanable* Water-Cooled Condensers. In fact, all types of stores relying on refrigeration units are insisting more and more on H & M Condensers. Here's why:

H & M Water-Cooled Condensers operate quietly, and give full capacity even on the hottest days or in crowded equipment rooms. Condenser headers can be removed easily for quick, thorough, mechanical cleaning of the water tubes. Scale and sludge, which reduce heat transfer, are removed without harmful chemical cleaners. Operating costs *stay* lower.

No matter what brand compressors you use, insist on H & M's *Cleanable* Water-Cooled Condensers.

There's a matching Halstead & Mitchell Cooling Tower for all refrigeration and air conditioning applications: sturdy, weatherized, propeller fan models for outside installations; quiet, centrifugal fan models for indoor installations with long duct runs. Take-apart models are available for problem installations.

Ask for all Halstead & Mitchell products at your nearby distributor's or write for descriptive literature—Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.

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They'll Do It Every Time

by Jimmy Hatlo

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BULLGRAVY LAID DOWN THE LAW TO HIS ART DEP'T. THEY HAD TO GET OUT THE WORK OR ELSE!!
THEN HE TAKES ROOT AND SHOOTS THE BREEZE ALL MORNING, HOLDING UP THE WHEELS OF PROGRESS--
I'LL NEVER FORGET A RUSH JOB I GOT OUT ONE TIME--HA-HA--I LETTERED IN THE NAME WRONG----NOBODY EVER NOTICED IT TILL IT WAS ON THE BILLBOARDS---THEN IN 1936--NO--'37--I WENT WITH R.D.D. AND Q.---WELL--THEY LIKED MY STUFF---ETC.--ETC.--
JIMMY HATLO
THANK AND A TIP OF THE HATLO HAT TO ART REMBRANDT SAGINAW, TEXAS
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An Overlooked Miracle In Our Industry

BRIGHTEST SPOT in the entire air conditioning picture, from a sales progress standpoint, continues to be automotive air conditioning.

Recession, slumping motor car sales, cold and rainy weather—none of these adverse factors checkreined the astonishing growth curve of package air conditioning for private passenger cars, taxis, fleets, and trucks this year.

It's an "overlooked miracle" because neither the giant automotive nor air conditioning industries foresaw it, prepared for it, promoted it, or even (in some instances) *recognize it even now* for what it's worth.

Here's a deal the General Public has promoted for itself, with a startling absence of fanfare and advertising on the part of producers.

At least 345,000 air conditioners were installed on automobiles in the United States between October, 1957, and June 30, 1958, the authoritative *Ward's Automotive Reports* has announced.

That amount included 177,643 factory-equipped new cars plus more than 167,000 units put on by dealers and independents.

Factory-installed air conditioners comprised 4.7% of new car factory output, as compared with 3.7% for the entire '57 model year and 2.7% in 1956.

Factory installations have averaged 19,700 a month this year as against nearly 19,500 in 1957 (when many more cars were sold). Dealer-independent rate of installation, however, jumped to 18,600 units a month from 13,200 units monthly last year.

Ward's attributes the rapid rise of independently installed units, as compared with integral factory jobs, to lower prices for "hang-on" units. The *Report* added this break-down of factory installations for 1958 model year through June 30 by manufacturers:

Manufacturer	*Units Installed*	*% of Output*
General Motors Corp...	124,530	6.4
Chrysler Corp.	24,782	4.2
Ford Motor Co.	22,683	2.2
American Motors Corp.	5,460	3.8
Studebaker-Packard ..	188	0.4

The New York Times estimates that dollar volume of auto cooling sales may reach $150 million this year, a 50% increase over the total attained in 1957.

"Our markets now encircle the globe, with volume increasing by leaps and bounds in as many as 25 foreign countries," reports H. Dale Gordon, president of the Automotive Air Conditioning Manufacturers Association.

It is now recognized," declares Gordon, "that the independent manufacturer is here to stay and that there is little conflict with the automobile manufacturer with regard to air conditioning.

"The replacement market in the automotive field has always been a large business. It is now evident that automobile air conditioning is on a solid foundation and will continue to grow rapidly."

Prices have become stabilized and service facilities expanded in this sector of the industry—unlike some other sectors, which have less reason to be proud of their performances in this regard.

Independent automotive air conditioning manufacturers collectively have more service points available to the public, through their many distributor and dealer outlets, than most producers of residential air conditioning.

Handy Way to Subscribe

To See the Industry In Action EVERY WEEK

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on residential, commercial, and industrial air conditioning, heating, and refrigeration for contractors, dealers, consulting engineers, distributors, servicemen, and manufacturers. Read the industry's only newspaper every week—you'll profit by it—only $6.00 per year, 52 issues (U.S. and Canada). Foreign: $10.00 per year.

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'The Conscience of the Industry'

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Members of AACMA include A.R.A. Mfg. Co. and Clardy Auto Air Conditioning of Fort Worth, Texas; Capitol Refrigeration Mfg. Co., Climatic Air, Frigikar Corp., John E. Mitchel Co. (Mark IV Div.), Parkomat Mfg. Co., and Tex-Aire Mfg. Co. of Dallas; Forston Co. of Houston; Cartrol Corp. of Kansas City, Mo.; International Automotive Air Conditioning of Fort Lauderdale, Fla.; Mobil-Aire Mfg. Co. of Dennison, Texas; and O. A. Sutton Co. of Wichita, Kan.

William E. Anglin of Capitol is secretary and William E. Lind of Frigikar is treasurer of this progressive organization. Back to the motor car manufacturers themselves:

General Motors Corp. reports that one out of every three Cadillacs produced this year is air conditioned. This same proportion applies to Chrysler's Imperial.

Clare Briggs, vice president of Chrysler Corp., chimes in: "All indications are that 5% of all new cars this year will be equipped with air conditioning. During the first four months of 1958, 2.2% of Plymouth cars, 3.5% of Dodges, 6.2% of DeSotos, and 10.3% of Chryslers were air conditioned. In each case, this represented an increase over last year."

Air conditioning installations on Chevrolets are up 50% over last year; while on Buick, Oldsmobile, and Pontiac, increases of 8 to 10% are noted.

Sid Shapiro, refrigeration products sales manager for Tenney Engineering, Inc., which supplies components for auto air conditioners, indicates that Frigiquip, Inc. expects a 65% gain over last year, Capitol Refrigeration a 25% gain, and Parkomat, Inc. a 20% gain. Sutton is 'way up; likewise A.R.A. and Mark IV.

Gentlemen, this business has ARRIVED. And it has been a life-saver this year to many manufacturers of parts and components.

The leader has always to be doing two apparently incompatible things. He has to encourage his administrators to preserve order, to maintain established routines. At the same time, he has to protect from their wrath the originals, the inventors, the crazy people to whom order is anathema and established routine a challenge to it. In the end, the lunatics usually come up with something which is both new and practicable. Persons whose task it is to maintain routines seldom have new ideas.—L. F. URWICK, *"Leadership in the 20th Century."*

* * *

The trouble with being punctual is that there's nobody there to appreciate it.

* * *

To handle yourself, use your head; to handle others, use your heart.—*Industrial Press Service.*

National-U. S. Radiator To Dedicate $Million Engineering Center

JOHNSTOWN, Pa.—National-U. S. Radiator Corp. will dedicate its new million-dollar Engineering Center in the company's Research Park here on Thursday, Oct. 16, according to an announcement.

The ceremonies will follow a luncheon to be given by the directors of the corporation, at which Dr. Eric A. Walker, president of Pennsylvania State university, will be the guest of honor and principal speaker. Guests will include business and civic leaders of the Johnstown area and representatives of the business press and professional societies.

There are more than 40,000 sq. ft. of space in the center, which will house the corporation's general engineering and research staff and general manufacturing executives.

Situated on an 8-acre tract, which is being developed as Research Park, it includes extensive facilities for the testing of domestic and commercial boilers, air conditioning units, and other products.

Hotel Plankinton Cools 140 Rooms On Upper 3 Floors

MILWAUKEE — The Hotel Plankinton here has air conditioned its upper three floors, giving guests in 140 rooms individual temperature control.

A Vilter 8-cylinder compressor with 25%, 50%, and 75% capacity reduction is the heart of the central system. It is connected with a Vilter 16-in. by 7-ft. two-pass "Freon" condenser and a 30-in. by 12-ft. chiller.

A cooling tower rated at 280 tons' capacity is included in the system.

A 9,000 c.f.m. Bayley "Aeroplex" fan draws outside air over a "Roll-O-Matic" automatic filter supplied by American Air Filter Co., dehumidifier coils, hot gas reheat coil, and into a mixing plenum.

The conditioned outside air there mixes with recirculated air and passes through an electronic filter and over the cooling coils.

A Bayley 22,500 c.f.m. fan impels the air through 6 and 8-in. Wiremold ducts to the rooms on the sixth, seventh, and eighth floors.

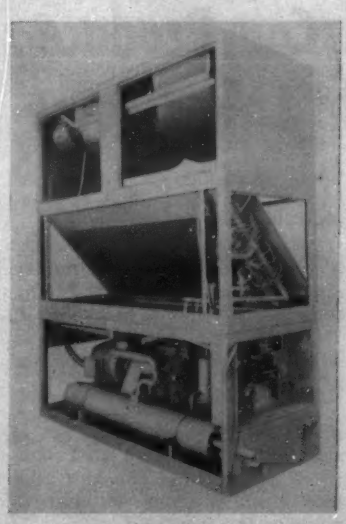
The high velocity system is controlled by Barber-Colman automatic controls. That company also furnished the supply and return grilles and duct turns.

System was designed by Charles Nagel & Associates, Wauwatosa. Louis Hoffmann Co. installed the air distribution system.

Cool Bowling Alley

MIAMI, Fla. — Conditioned Air Corp. here had the contract for sale and installation of Carrier air conditioning in Cloverleaf Lanes, "the nation's showplace of bowling," at Highway 441 and 176th St., N.W.

'Dialaire' Year-Round Packaged Unit Suited to Multizone Applications



ST. LOUIS—A new package type winter-summer air conditioner for commercial and industrial use has been introduced by the newly-formed Dialatemp Corp. headed by Russell E. Keller, long established in the industrial air conditioning field.

Known as the "Dialaire," the unit is especially applicable to zone conditioning of multi-story buildings, factories, institutions, retail stores, shopping centers, and similar applications.

Unique feature is the custom-built Dialaire direct drive, open type, reciprocating compressor. Operating at 1,750 r.p.m., it is said to provide greater displacement and more capacity with minimum piston travel.

The Dialaire is available in three models and nine sizes from 15 to 100 tons' capacity. It is a complete self-contained package, with all necessary piping, wiring, and controls, and conforms to virtually all municipal codes. It is claimed to be easy to install, and occupies a minimum of floor space.

Three Dialaire models are available. Model WCD, has water-cooled condenser; Model WSD, has built-in water saver requiring only a small amount of make-up water; and Model ACD, has matched air-cooled condenser.

For winter air conditioning, two types of heating coils are offered: conventional hot water coil or a new type of non-stratifying steam coil.

The Dialatemp compressor features a crankcase and cylinder block cast into a single piece, a special alloy iron compressor body with removable cylinder sleeves. The aerodynamic design of the gas passages and valve ports minimizes low pressure losses.

Forced feed lubrication system includes a high capacity, positive displacement, manually reversible oil pump with a large suction strainer and relief valve.

Safety valve is set to by-pass discharge gas to the suction side of the compressor when abnormal pressure differentials occur.

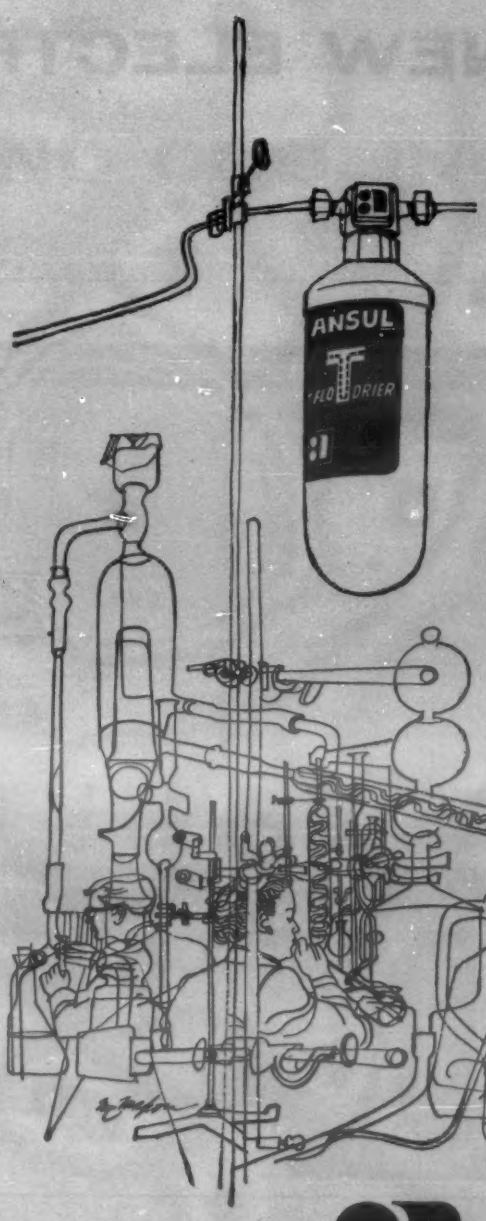
Built-in automatic capacity control varies compressor capacity in direct response to suction pressure change. There are no external wires or tubes.

The compressors, using Refrigerant 12 or 22, are available in nominal ratings of 5 to 125 hp.

For Your Reprint Copy

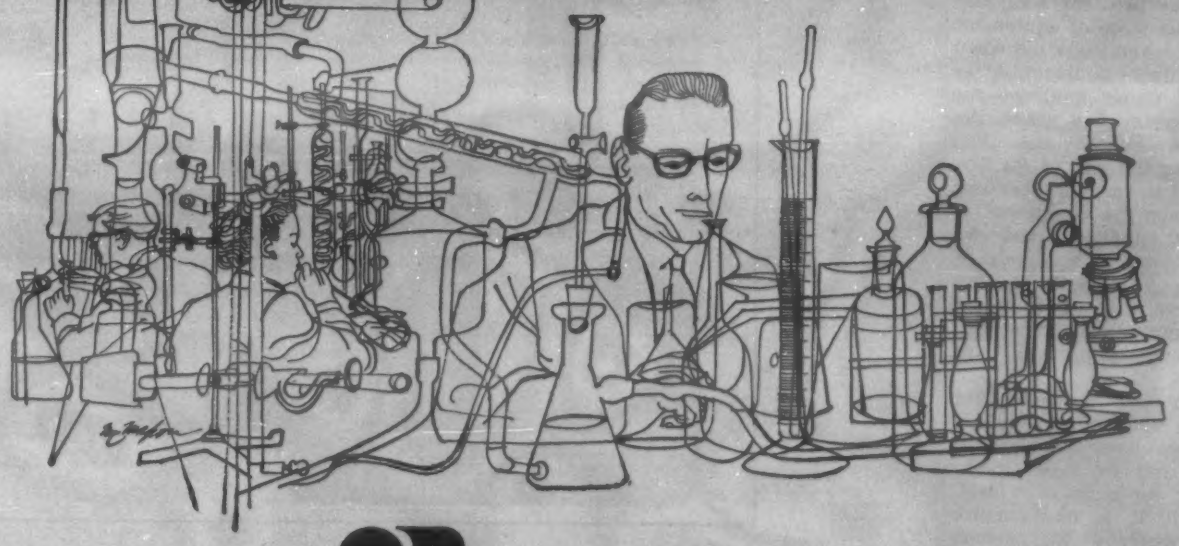
"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.



PEOPLE MAKE THE DIFFERENCE

A free-wheeling kind of imagination has been at work when someone creates a really new product for the refrigeration industry . . . for any industry. We mean a product like Ansul's T-FLO DRIER—completely new in concept, excitingly successful in use. Let our Ansul people put their blend of experience and imagination to work for you. Their personal attention to your refrigeration moisture problems is yours for the asking and our refrigeration products guide is yours for the writing.



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FIRE EXTINGUISHING EQUIPMENT / INDUSTRIAL CHEMICALS / REFRIGERATION PRODUCTS / NATIONAL DISTRIBUTORS OF "FREON" REFRIGERANTS

'It's Surprising How Easy They Are To Sell'

Service Maintenance Contracts Can Produce Steady Income, Profit and Hold Labor Force

CHICAGO — Service maintenance contracts can produce a steady income and profit for the air conditioning and refrigeration contractor, and help him in maintaining a year-round labor force, if the contractor operates and promotes his program in a well-planned manner.

That's what Walter McCarty, McCarty Bros., Inc., River Forest, Ill. contractor, told members of RACCA (national) at the "Welfare and Progress Forum" held during the association's last annual convention.

Basing his discussion on the experience with his own successful and continually growing service maintenance contract program, McCarty pointed out that the first essential was to have a good service department.

Percentage of Gross Profit From Service Is High

"In talking with other contractors I find some who, even if they have a service department, pay almost no attention to it. I think this is a terrific mistake, because if you will talk to any contractor who has operated a service department successfully for any period of time at all, you will be amazed and dumbfounded at the high percentage of gross profit that there is in service.

"I just wish that we could approach the percentage of gross profit in sales that we do in service."

Describing his early experiences with the service maintenance contract, McCarty said that "we called it a service contract, and under this contract we furnished all labor and parts to take care of a customer's piece of equipment. We thought that was the way to do it. But as time went on, we found ourselves with some pretty serious problems.

Old Equipment Was Too Costly To Service

"The first problem was that possibly this piece of equipment was five to seven years old when we took it under contract. After we had it under contract for another four or five years, the piece of equipment was then approaching the end of its life, and we had to furnish labor and parts to keep the equipment in first class condition, and we would wake up with a piece of equipment under contract that was obsolete and the customer actually wanted us to replace that equipment, to put in new equipment.

"We had other problems that made this kind of a contract costly, so we changed it and now have one that we think is the answer—in our business at least.

"We call it a maintenance contract, whereby we furnish all of the labor to keep this customer's piece of equipment in first class condition. If any parts are needed, we sell them to the customer who is on the contract at list price, less 15% discount.

"When we got into systems using large amounts of Refrigerant-22, we wrote into our contract that the customer would be billed for refrigerant at half price.

"The price of this kind of contract is low compared to a contract where you furnish all parts as well as labor, and it gives the contractor a better break. In case you do have a terrific breakdown on a particular piece of equipment, the whole burden doesn't fall on your shoulders."

One element that is essential in making service maintenance contracts profitable is to sell and educate the customer to the fact that there is a certain obligation on his part. The customer must not try to alter the equipment or repair it without notifying the contractor.

"With maintenance contracts a considerable amount of money must be invested in watching the cost," McCarty pointed out. "Each contract that we have in our files has a cost record against that contract.

"Every service call that is made on it, every part that is sold and credited to that contract, every bit of gas that goes into that machine is charged against the contract.

"Thus, at the end of the year when a contract is up for renewal we can get a complete picture of exactly what happened on that particular customer's piece of equipment. If it has cost us money, we will know it.

"Sometimes it will cost us money because of the customer's lack of attention. It may cost us money because we did a poor job of servicing the equipment ourselves; or it may just be a bad piece of equipment from the word go.

"We can tell whether we should continue with that contract, whether to get off of it, or whether to increase the price on it."

Maintenance contracts are apparently very easy to sell. McCarty described the relatively modest sales program for such contracts used by his firm as follows:

"When our units go out with their first year guarantee, we send the customer a letter and enclose the maintenance contract with it. And our experience is that a little over 50% of those customers will sign the contract and mail it back to us. That is all it takes to get those units on a maintenance contract —write a letter to the customer and tell him he ought to have a contract, and enclose a copy of the contract.

"After a reasonable time, for those who don't send back the signed contract, we send out a man to contact the customer. It is really surprising how easy they are to sell, and the profit that is in them.

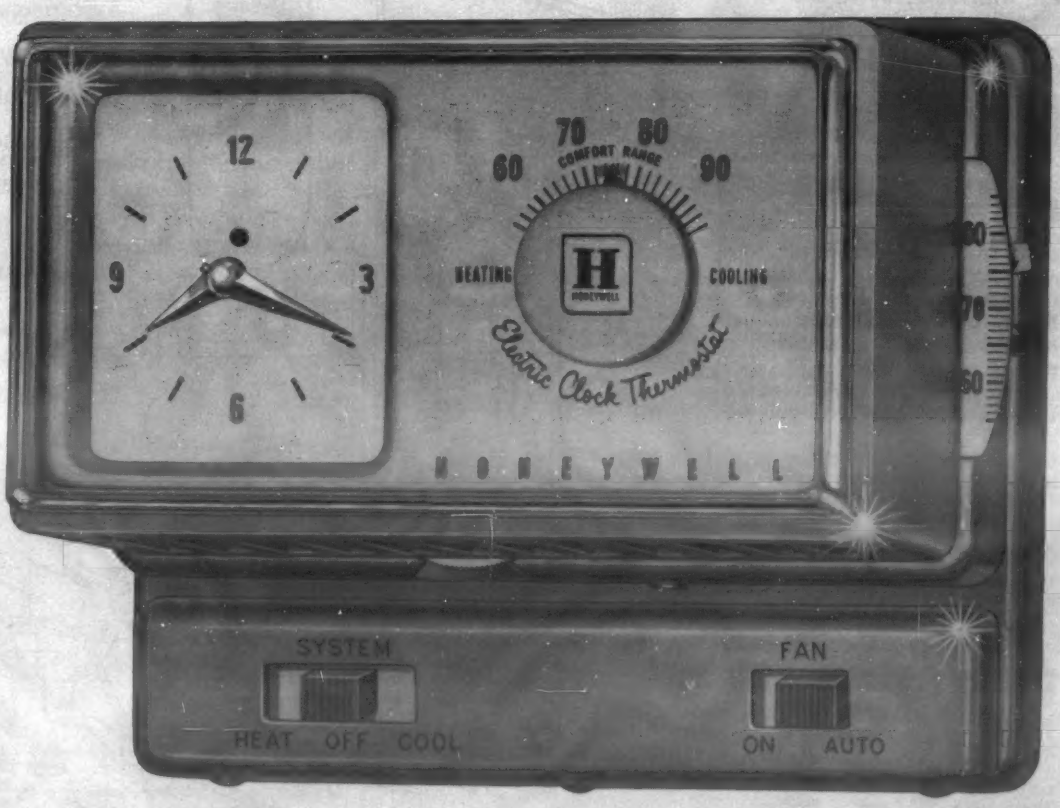
"Here's one thing it does for our business. We found that years ago, operating without maintenance contracts, we ran into quite a peak of service sometimes in July or August, whenever we hit that hot spell. The number of service calls would sometimes be just above and beyond our ability to handle.

"But with the maintenance contract when we get out there and take care of this equipment in the winter, and we are out

Now from Honeywell.....

NEW ELECTRIC CLOCK

FOR BOTH



New Honeywell Heating-Cooling Thermostat automatically controls your year-round air-conditioning system. When controlling heating, it automatically lowers home temperature at night for cool, economical sleeping, raises it in the morning. When controlling cooling, the Electric Clock Thermostat automatically raises temperatures at night for economy. In humid areas it can automatically lower temperatures at night for dehumidification. Here at last is the answer to customers who want the ultimate in year-round comfort!

working all winter long on towers and with evaporative condensers and the rest of the installation, we can better organize ourselves.

"We service large users of equipment. There is one account in Chicago with almost 100 stores and all winter long we can go out to those stores and clean up the machines and get them all into good operating condition and it will amaze you to find out how few calls you will have on a piece of equipment that is under maintenance, provided the maintenance is properly handled."

Questions and Answers On Contract Program

The RACCA members who heard McCarty's discussion had a number of questions on the operation of a maintenance contract program, and some of the principal ones included these:

Q. You have a 15% discount on parts under a maintenance contract. Don't you feel that is cutting something out of your profit?

A. No, we feel that it is an incentive to buy the contract and we feel that the contract can afford it. The cost records on contracts have proved that.

Q. Do you charge a customer that calls Saturday or Sunday nights? Do you supply labor under maintenance contract at any time of the day or night without a penalty charge?

A. Our contract calls for an overtime payment on any time after ordinary working hours. However, if we have a piece of equipment under contract, and maybe have only one or two service calls during the year, and that call didn't come in on a Saturday or Sunday, we don't enforce the overtime rule. But if we find that the customer takes advantage of us by calling Saturday afternoon and telling us that the machine broke down Friday morning, then we do start to enforce the overtime feature of the contract.

Q. How do you proceed to price a maintenance contract on equipment that you are taking over? You mentioned the fact that the equipment is sometimes four or five years old when you get it. How do you know how much the maintenance contract charge should be for the first year?

A. We first give the system a good thorough inspection, and then give the owner a proposal as to exactly how many dollars it will cost to put that equipment in condition before we will take it under contract. From that point on, our experience can tell us about what we should charge for that particular piece of equipment, comparing the particular type of equipment with other similar installations that we have under contract.

Q. You state that you make a maintenance contract with the labor cost. Is that a flat labor cost for the year, or is it on the basis of so many inspection calls with added labor in case of a major breakdown?

A. Under the maintenance contract we visit the installation four times a year, give it a good thorough check-over. In the meantime, if there are any emergency calls, the customer does not pay for the labor on the call.

Q. Do you have a set maintenance contract fee, or is it set up on a tonnage basis?

A. It is usually set up on the basis of size, age, and make of equipment. For example, we will take a 5-ton package unit of a certain vintage and certain make and establish a price for that. A 5-ton package unit within the first six or seven years of its life, we charge about $70 a year.

Many Pay Year In Advance For 5% Discount

We bill these maintenance contracts almost any way the customer wants them billed. We bill them monthly, quarterly, or by the year. We hit upon the idea of billing the customer a year in advance and giving a 5% discount, and you will be surprised at how many companies will take that discount.

Q. Is this equipment refrigeration or air conditioning? What type of customers is it best to have under maintenance contracts?

A. It is mostly air conditioning and heating. Most of it is industrial cooling, heavy commercial refrigeration, air conditioning and commercial heating, and industrial heating. If you will try to get your maintenance contracts into business establishments that are not open so many hours a day, naturally your risk is not so great. You get into a large industrial company, the office closes every day at 5 p.m. and is closed all weekend.

Q. How much coverage does the contract give the customer? Does it include all component items or a basic piece of equipment only.

A. It generally includes the whole system. We list the number of modulating stem valves and the water circulation and water pumps, for example. If it is a cooling and heating system, it will cover just the cooling end of it, unless the customer wants us to specify both.

Q. How much profit is there on service maintenance contracts?

A. The percentage of profit on a particular contract will vary from year to year, depending on how much trouble you have with a particular piece of equipment. On contracts where we seem to have lost money, we sit on it and try to analyze it, and find out where the trouble has come. But we have found that there is generally as much as 50% gross profit in maintenance contracts.

What are the elements of "good management" for the air conditioning and refrigeration and heating dealer or contractor?

There are many elements that go into "good management" for this kind of a business, but it would seem that the three principal ones would be (1) the development of the kind of salespower that will develop enough sales volume to operate the company profitably and promote expansion; (2) proper control of expenditures and services to insure an adequate profit; (3) proper direction and handling of personnel to promote growth in the business and retention of good personnel.

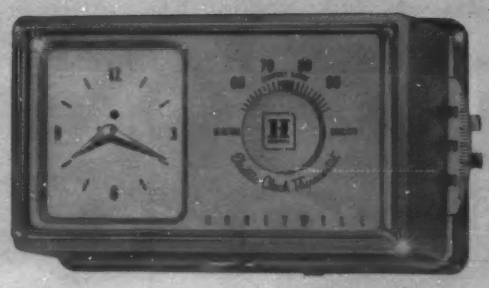
In this series of articles the NEWS has drawn from a variety of sources to present some of the best current thinking on some specific elements that make for success.

THERMOSTAT HEATING AND COOLING!

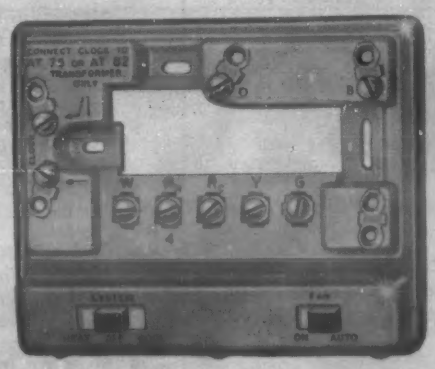
combines all the field-proven features of the famous Honeywell T852 Electric Clock Thermostat plus the versatility of add-on Heat-Cool Sub-base.

Here's a sensational new addition to Honeywell's complete thermostat line. This brand new clock thermostat will give your customers the utmost in luxurious comfort while offering you the "plus" feature of stocking one thermostat and adding a heat-cool subbase later. Costs very little over the regular "heating only" thermostat. Your customer can use it for heating until he decides to install his cooling system. Then, the simple addition of the sub-base converts it to the world's finest heating-cooling electric clock thermostat!

For detailed information on Honeywell's new Heating-Cooling Electric Clock Thermostat, call your local Honeywell office, or write Minneapolis-Honeywell, Dept. AN-10-145, Minneapolis 8, Minnesota.



Heating-Cooling Electric Clock Thermostat (T861, above) installed for heating only. **Sub-base** (Q426, below) can be easily installed later when cooling system is put in. Together, they make up the Y383 package.



Honeywell

First in Control

Report on Education

Another article in a series dealing with all levels of education and training in the air conditioning and refrigeration industry.

By Frank J. Versagi, Technical Editor

5. Correspondence Schools

Many of the trade schools also offer correspondence courses in air conditioning and refrigeration, and there are also pure correspondence schools, such as the well known ICS—International Correspondence Schools.

There are those who hold that correspondence courses are all right when one is attempting to learn some academic subject like math or English, but that they are next to useless in learning a trade. This group points out that the learning process is helped immensely by discussion and exchange of ideas and problems only possible in a classroom.

The U. S. Department of Labor, in one issue of its "Occupational Outlook," points out that "persons who wish to learn more about their jobs or wish to advance to a better job in the same field are the ones who derive most benefit from correspondence courses."

With adults in all fields, home study courses are quite popular. Within reason, the student can proceed at his own pace, neither hurried nor slowed by the necessity for teaching a whole class. He can pick his study time to suit his convenience, and change it from time to time as he sees fit; there is no one time and place that he has to attend school regularly.

And, very important, people in small cities or otherwise far from educational centers of any type, can get some education.

Actually, there are now some 1,000,000 adults taking home study courses in subjects like the skilled trades, religion, business, high school courses, accounting, and art. The National Home Study Council, which sets up standards for correspondence schools which belong to it, boasts that over 25% of all newly licensed Certified Public Accountants each year have studied by correspondence.

It is interesting to note the relative popularity of air conditioning and refrigeration correspondence courses. By far the most popular courses are those in radio and TV. Here there are some 136,000 students enrolled in 39 schools.

Surprisingly, religion comes next with 93,000 enrolled in 31 schools.

Air conditioning is offered by only four NHSC-recognized schools, and some 7,000 students are currently taking the courses. Other mechanical trades are offered by about 36 schools and have 58,000 people.

According to Homer Kempfer, executive director of National Home Study Council, "80% of the people in correspondence schools enroll to get ahead in their present jobs or to prepare for a new occupation. The remainder enroll chiefly in academic and hobby courses."

Studying home study courses in cooling, the NEWS spoke with many people who have taken such courses at one time or another as well as with the personnel from the schools.

The consensus seems to be that home study in a subject like refrigeration is most effective when it is *related* training; that is, when the man is already actively engaged in the service field or at least some phase of the trade.

Inexperienced Man Can't Get Much from Course

One senior engineer said, "I took a correspondence course, and it helped tremendously. However, the school advertisements tend to mislead by implying that a man starting cold, with no previous experience, can take the course, then immediately find employment or go into business for himself.

"The point is," he continued, "that a man who has never held a wrench in his hand is not going to get much out of a correspondence course in refrigeration—at least not as much as he would out of a trade course at a school.

"But the man who has worked with tools, and who has some experience in the field, can pick up a great deal with a properly chosen home study course."

Correspondence courses are offered at the trade level and at the technician level. Trade school offerings in home study vary from about 50 to 80 lessons. Upon completion of the lessons, the student can take shop training at the school for periods varying from one to three weeks.

To aid those persons who cannot spare even a week or two from their job to attend shop courses, Commercial Trades Institute, Chicago, has developed a correspondence course during which the student is sent bits and pieces and tools which, by the course's end, will allow him to have built a complete and operating condensing unit. Then he is given a choice of plans to use the condensing unit in a home refrigerator, air conditioner, freezer, or milk cooler.

The technique is only a couple

National-U. S. Radiator Sending 2 to College

NATIONAL-U. S. RADIATOR CORP., for the sixth consecutive year, is sending two high school graduates to engineering colleges. The company will pay tuition, books, and living expenses for the chosen boys who want to become engineers but have no scholarship help and cannot otherwise afford a college education.

Upon completion of college studies, young men are offered full-time employment in engineering, research, manufacturing, or sales divisions of the company.

Where high humidity is needed . . .

THE LARKIN BAFFLE COOLER COIL

Is ideal for Walk-In Coolers, Florist Boxes, Produce Boxes, Packing Rooms, Etc.

In refrigerators where a high humidity is necessary, it will pay you to install the Larkin Baffle Cooler Coil. By handling a large volume of air and cooling it slightly each time it passes through the coil, it is possible to maintain a higher humidity. Louvers are engineered to provide correct circulation of air and accelerate its flow. Air constantly swirls around stored products, providing proper refrigeration and humidity.

The Larkin Baffle Cooler Coil is durably constructed and is a complete unit. It consists of an aluminum cross-fin coil, double louvered baffle with drain pan, and hangers.

OUTSTANDING FEATURES

- Patented Larkin Cross-Fin coil with aluminum fins and staggered copper tubes mechanically expanded (aluminum tubes available for ammonia refrigerant)
- Baffles are constructed of heavy-gauge, polished aluminum
- Adjustable baffles easily removed for inspection and cleaning
- Coil and baffle hangers are heavy-gauge die-stamped aluminum channel punched with keyslots for easy attachment
- Matched baffles for left and right sides furnished if specified
- Special-sized baffle cooler coils are also available

See your wholesaler or write for Bulletin 1057

LARKIN COILS INC.
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MICROMOTORS
One of largest stocks in the world!
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FACTORY DISTRIBUTORS
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West 9-6794

years old and has not yet stood the test of time, but CTI is enthusiastic about it.

The various schools allow two to three years for the man to complete his home training, although 18 months is closer to average time taken by a student who completes the course and one completed lesson a week is recommended to the student.

Student Mails Test to Correspondence School

Each lesson is accompanied by a test or quiz which the student mails into the school where it is graded, remarked upon, and returned. (A later article will discuss the several testing techniques.) The student is also free to write in on specific problems or difficulties, and the school offers consultation service along course lines.

At the trade level, there are usually no prerequisites for acceptance into correspondence courses. In a few cases, if a starting student shows insufficient ability, he will be advised to drop the course. In other cases, the tests are sent back repeatedly until passed. There is reason to criticize this latter procedure since it becomes almost impossible *not* to pass a test when the same one is repeated.

Then, too, some schools use 65% as a passing grade.

Correspondence schools at the trade level obtain students by advertising in such publications as *Popular Science* and *Popular Mechanics* as well as in the several men's magazines. These ads usually promise an opportunity for greater income, and almost always stress the possibility that the graduate from the school may go into business for himself. And, judging by the letters received by the schools, some of their graduates do just that.

Some of the schools have salesmen in the field contacting people cold, or following up on leads obtained through the ads.

There has been some abuse of this selling technique in that some have made a monetary deposit only to have the school disclaim the individual as one of their legitimate salesmen. Reputable schools suggest that any deposits be made by checks payable only to the school, not the salesman.

Physical appearance of the lesson material varies from mimeographed info on newsprint grade paper to well presented material available in looseleaf form for incorporation into master books.

Total subject matter covered in trade correspondence courses varies considerably, and the prospective student would do well to ask for complete outlines from each of several schools before choosing.

This is especially important since the cost of correspondence courses is on the same order as that of the actual trade courses —from about $250 to $400. Consideration must be given too, to the length of shop time offered, if any.

As in any business transaction, the student should read or have the contract read carefully before signing. The enrollment agreement from one school, for example, specifies that a student who drops out within the first three months of a course must pay at least $90 regardless of how much training he has received. While not dishonest in any way, this is the type of provision of which the student should be aware.

No trade school or correspondence course can firmly promise employment to the student upon completion of the course. Most schools make some attempt to place the man, although a few merely give letters of recommendation to whomever the student himself might contact, so that in effect the job-hunting is completeiy up to the man.

As with all schools, a good way to judge their value is for the student to determine for himself what the industry acceptance of the school is.

Correspondence courses exist at the college level; they vary from unaccredited institutions to "diploma mills." And, of course, fully accredited colleges offer correspondence courses, although the NEWS was unable to find one offering cooling subjects by correspondence.

(To Be Continued)

Activity In Education

CONFLICT between liberal and vocational educational philosophies, which are discussed in the NEWS' current "Report on Education," has been subject of a comprehensive study by Carnegie Corp. Dr. Earl J. McGrath executive officer of the Institute of Higher Education, Teachers College, Columbia university, finds the liberal colleges are changing into vocational training institutions.

Noise Abatement Symposium Oct. 9-10

CHICAGO—W. E. Blazier, Jr., research engineer for Coleman Co., Inc., will be one of the speakers addressing the ninth annual National Noise Abatement Symposium to be held here Oct. 9-10.

He will discuss "Customer Acceptance Criteria for Noise Control of Residential Heating and Cooling Product."

A highlight of the conference will be a talk by Rear Admiral Lawrence B. Richardson, senior vice president in charge of engineering for General Dynamics Corp., on "Current and Future Developments In the Jet Age" at an Oct. 9 luncheon in the Hotel Sherman.

The conference will deal with problems of noise control and reduction, according to the sponsors.

NEW LOW-COST ANSWER TO
DE-SCALING and CLEANING
Problems

The PORTABLE

HASTINGS CLEAN-IT

THE ONLY COMPLETE UNIT ON THE MARKET

INVALUABLE FOR CLEANING ALL TYPES OF CONDENSERS

Coil Surfaces · Coil Tubes
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FEATURES INCLUDE
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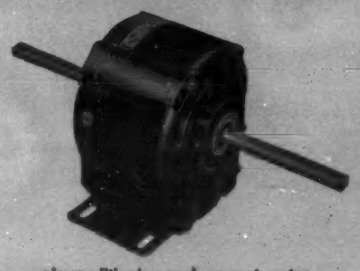
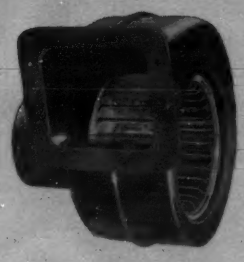
INCREASE YOUR SALES!

Authorized *Redmond* Distributorships Available in Selected Markets!

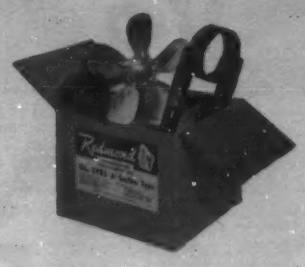


air conditioning replacement motor



for applications through 325 cfm

condenser fan motor



"all in one" replacement kit

Redmond offers you both a complete line of fhp electric motors, blowers, kits, and accessories, and the name that is known nationally as "The BIG Name in Small Motors."

As a Redmond Distributor you profit because of the products available to you, and you increase your sales because Redmond gives you without charge the most complete line of sales and merchandising aids available, backed up with a complete advertising program. It will pay you to take a minute to find out if the Redmond Distributorship in your area is still available. Just fill in the coupon below.

FREE SALESMAKERS

Wall Charts

Catalog Pages with imprint space

Catalogs
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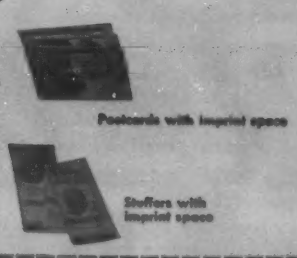
Motor Handbook



Postcards with imprint space
Stuffers with imprint space

Franchise circulation ads
National trade, technical, and consumer advertising

Redmond DISTRIBUTORS DIVISION
Redmond Company, Inc., Owosso, Michigan

I'm interested in obtaining a Redmond Distributorship.

Is one in my area still available?

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Coming–a SPECIAL ISSUE to answer the most challenging question in the industry today

Residential Air Conditioning at the crossroads

To give an authoritative answer on "Where do we go from here?" AIR CONDITIONING & REFRIGERATION NEWS is going into the field to ask the only individuals in a position to know —top executives in the year-round residential air conditioning field including manufacturers, cooling and heating contractors, distributors, and dealers.

Here are just a few of the explosive questions to be answered:

- Do enough families truly want air conditioning to provide a substantial market with real growth possibilities? If not, why not?
- Is "selling" really the problem—or is it "engineering?"
- Are present-day installation practices and costs dampening enthusiasm for the product? If so, how can they be improved?
- How much of the residential market can and will be supplied by window and through-the-wall units?
- How much progress can we expect in the next five years in the application and sale of reverse cycle units and supplemental electric resistance heating?
- Where, how, and by whom has imagination been applied to *selling* residential heating systems?

Imagine the Interest of this Five Year Look at the Future to Your Customers and Prospects!

The "WHERE DO WE GO FROM HERE" issue of the NEWS will answer the above questions—and many others— in a dynamic symposium technique which is sure to generate outstanding interest.

This special editorial job is bound to have great retentive value. It will be discussed, studied, routed, and acted on for months to come. And it will stand as one of the most valued showcases for your advertising message to come along in many a year.

RESERVE SPACE TODAY

Be sure the thousands of readers of AIR CONDITIONING & REFRIGERATION NEWS find your product or service message in this challenging issue. Remember—the results of this nation-wide depth survey of important influences in every phase of the industry will appear in the November 10 issue.

Closing October 29

AIR CONDITIONING & REFRIGERATION **NEWS**

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The leading air conditioning publication with highest paid circulation in the field.

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- **LOS ANGELES,** 4710 CRENSHAW BLVD., AXMINSTER 2-9501, JUSTIN HANNON.
- **DETROIT,** 450 W. FORT ST., WOODWARD 2-0924, AL SCHILDHAMMER.

WESTCOTT PRESENTS CONSULTING ENGINEERS' CASE

Holladay & Westcott
Los Angeles 41, Calif.

Editor:

The article, "Architects, Consulting Engineers and Contractors at Work," carried in your July 21 issue certainly calls for a rebuttal from the consulting engineers. In reading this article there were certain implications made concerning consulting engineers which implied a set of general conditions which I hope and believe are not generally valid but which may well have been valid for a few specific cases.

There are many problems in the relationship between architects, engineers, manufacturers and contractors which will have to be reconciled and solved through a mutual and cooperative effort. I have the feeling that the selfish interest motives of the various groups tend to dominate their proposed methods of operation.

HONEST EVALUATION NEEDED

If each group would honestly evaluate their own position and their relationships to each other with the end objective of giving the client or owner the best that their combined efforts could produce, we might get rid of some of the petty jealousies and sniping tactics that now go on.

Fortunately there are substantial firms and individuals in the four basic categories of the construction industry — architects, consulting engineers, contractors and manufacturers, who recognize that each group has a place on the team.

Through the Consulting Engineers Association of California and the Consulting Engineers Council, which is a federation of state and regional associations covering the United States, we are diligently working toward raising the standard of performance for consulting engineers in providing plans and specifications that are practivable, intelligible and economically sound so that the contractors and manufacturers can legitimately bid on and construct to these plans and specifications.

JOINT COMMITTEE WORKS

In developing this program in California we have had a joint committee of architects, engineers and a number of the subcontract groups working on a set of minimum standards for the design professions. The suggestions in these standards came from contracting groups as to what they wanted and what they expected in plans and specifications. Concurrently, a set of minimum standards for construction trades are being developed showing what may reasonably be expected from contractors to carry out their obligations.

To me this is a constructive approach to the over-all problem and it requires a lot of conference table time as well as a lot of compromise and give and take to develop standards that all can live by.

The story is certainly far more complex than my brief statments could cover. The significant thing to me is that with the formation of the Consulting Engineers Council there is now a national organization to speak for Consulting engineers. Other points are that no organization no matter how well intentioned can guarantee the actions of all members. However, every legitimate organization does have as one of its principal aims the improvement of standards of performance and cooperation.

RALPH M. WESTCOTT

ON-THE-SPOT FACTS REFUTE FAULTY FURNACE CHARGE

Lone Star Gas Co.
Dallas 1, Texas

Editor:

Your May 5, 1958 issue contained a story about Military Family Housing under the Capehart Housing program for military bases. The article told of a publicized failure of some 200 electric air conditioning units for Dyess Air Force Base near Abilene, Texas. Air Force investigation of the rumor at that time found that, in fact, at the most only 12 units were inoperative at any one time. However, the article stated that whereas 462 gas furnaces had supposedly failed, "hardly any mention" had been made of this.

Dyess Air Force Base is serviced by our company. We were quite interested in this reported failure of gas furnaces, not only because such a large number was involved but also because gas central furnaces require very little service. Our local district manager informed the base commander of the article.

The installation engineer in charge of Capehart Housing told us the investigation of the summer cooling units, made shortly after the publicity on the 200 units was circulated, confirmed that 200 service calls were received within a given period of time but many were calls from the occupants who needed instruction on proper operational procedures.

We also were told that there has not been a complete mechanical failure on any one of the gas furnaces. There have been normal adjustments and replacements of a few defective controls, but the operation of the gas furnaces at this base has been very satisfactory.

We call this matter to your attention because we find no evidence of failure of 462 furnaces, nor has the base installation officer found the operation to be anything but satisfactory.

JIM CARLL,
Public Information Director

WANTS BOOK OF 'DOPE' STORIES

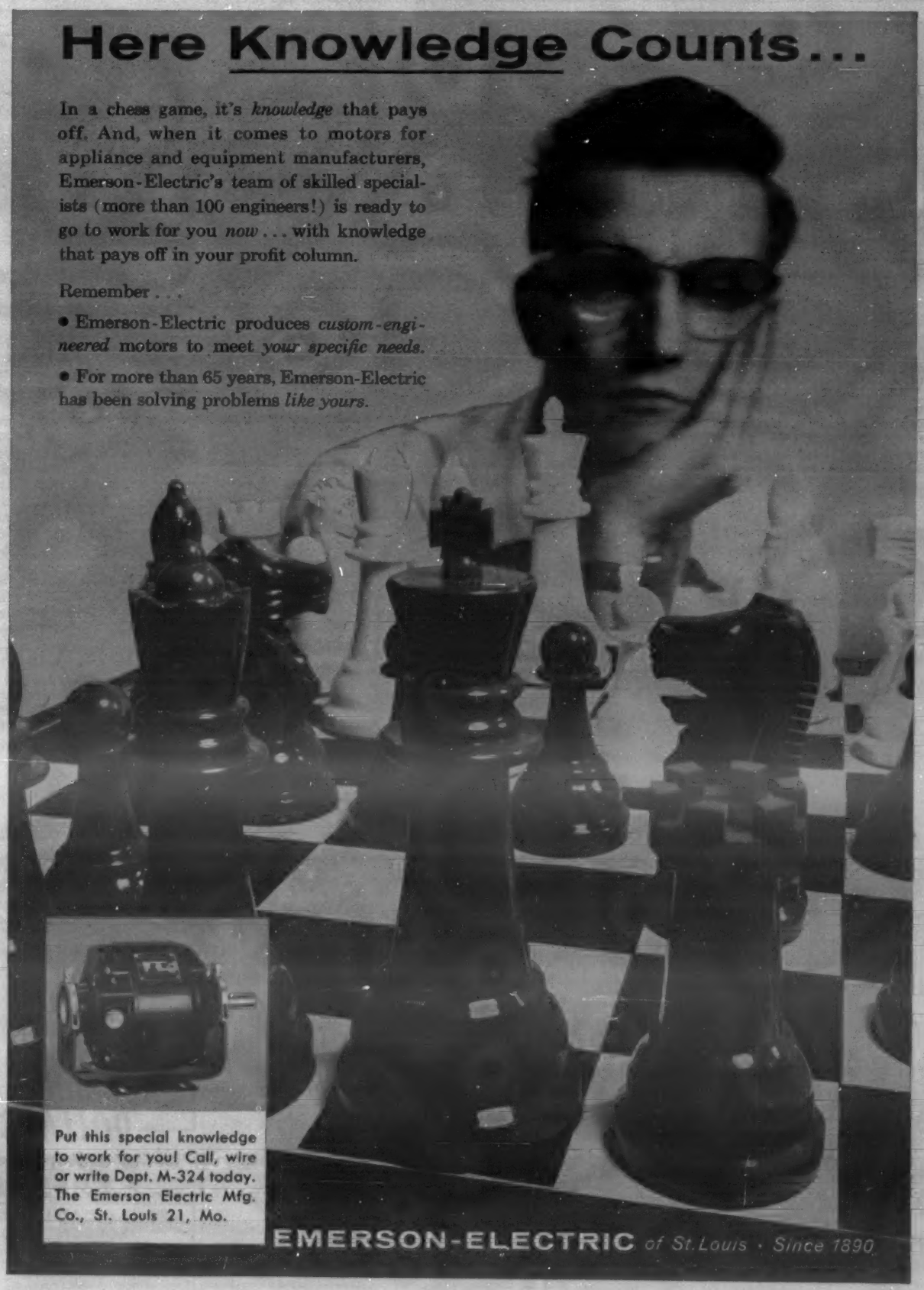
Malcolm Hinkle, Inc.
Pampa, Texas

Editor:

I read and enjoy your "Dope" column each week and I just wonder if you have by chance compiled your stories of the week in a volume that I might purchase.

I would like to say again that I enjoy your column very, very much.

MALCOLM E. HINKLE


Here Knowledge Counts...
In a chess game, it's knowledge that pays off. And, when it comes to motors for appliance and equipment manufacturers, Emerson-Electric's team of skilled specialists (more than 100 engineers!) is ready to go to work for you now... with knowledge that pays off in your profit column.
Remember...
• Emerson-Electric produces custom-engineered motors to meet your specific needs.
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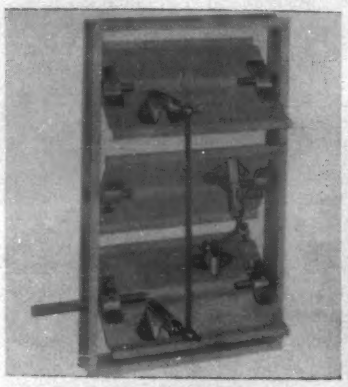
Put this special knowledge to work for you! Call, wire or write Dept. M-324 today. The Emerson Electric Mfg. Co., St. Louis 21, Mo.
EMERSON-ELECTRIC of St. Louis • Since 1890

Elgen Offers Newly Designed Damper Hardware

Development of newly-designed damper hardware has been announced by Elgen Mfg. Corp., Dept. AC&RN, 41-34 39th St., Long Island City, N. Y.

Named "Ball-O-Matic," the new hardware is made of a heavy gauge tubular design and features a solid brass ball-jointed rod holder that is held in any predetermined position by a stainless steel spring, the announcement said. Ball-O-Matic is claimed to be self-aligning and non-binding.

For use on opposed action dampers, Elgen has developed "Oppo-Matic." This hardware consists of the basic Ball-O-Matic bracket with the addition of an exclusive "Micro-Set" plate and a smaller companion bracket.



Both surfaces of the tubular Ball-O-Matic and the Micro-Set are serrated so that the plate can be securely locked into position. Once locked in place, Micro-Set bears against shank of the ball-joint and prevents damper blades from opening more than 90°.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

More details on the products described on this page may be obtained by writing the manufacturer at the address given in each story.

Motors Offer Reduced Assembly, Maintenance

Major changes in its "Form G" fractional horsepower motors will enable manufacturers and users to reduce assembly and maintenance costs "in over 1,000 different applications," according to General Electric Co., Dept. AC&RN, Schenectady 5, N. Y.

Features include plug-in quick-connects for all terminals, "cutting wiring in half"; quick change of rotation by simple reversal of the two plug-in motor leads; and brass links that simplify voltage change on dual-voltage motors, the company said.

"An enlarged wiring compartment and a narrower terminal board permit fast hook-ups during installation," it was stated. "An anti-rust treated shaft and bright-plated hardware for protection against corrosion, a built-in lug for convenient grounding connection, and a composition washer in the centrifugal switch for quiet operation are other significant changes.

"A new bonding method is used for insulating the stator winding and metal clamps securely fasten the stator laminations for more uniform core alignment. Identification and maintenance data have been made highly legible for easy reading."

Wiring time during installation can be cut in half with the plug-in quick-connect terminals which are used for all internal and external connections, according to company engineers.

Peerless Furnace Features Large Blower Capacity

Extra large blower capacity, for use in conjunction with summer air conditioning, is a major feature of a new line of sectional gas furnaces recently announced by Peerless Corp., Dept. AC&RN, 1853 Ludlow, Indianapolis.

Named the "Dixie Aire," the line is specifically designed for areas where summer air conditioning is in great demand, according to the company. Three capacities, all AGA approved, are presently available with the following inputs and air deliveries, all at 0.5 in. external static pressure: 60,000 B.t.u.—1,200 c.f.m.; 85,000 B.t.u.—1,600 c.f.m.; and 115,000 B.t.u.—2,000 c.f.m. Other units will be added to the line in the near future.

Steel heat exchanger sections of "airfoil" design are located on 4½-in. centers with 2½-in. minimum clearance between sections. Burners are new, improved ribbon type. Blowers are belt driven. A year-round thermostat for use with summer air conditioning is furnished as standard.

A lower-priced companion line, named the "Challenger," is available with the same B.t.u. inputs but with somewhat lower c.f.m. ratings and without chrome trim and year-round thermostat, Peerless said.

Airkem Offers New Odor Control Concept

What is described as a new concept for controlling indoor odors has been announced by Airkem, Inc., Dept. AC&RN, 241 East 44th St., New York City 17. This system is based on a new product, "Solidaire," a solid form of Airkem's odor counteractants.

The firm's business and institutional odor control systems based on the use of Solidaire consist of two types, for packaged air conditioning systems and for restricted areas where no air conditioners are available.

Additional equipment for large central systems and large non-air conditioned areas is under development.

Airkem "Sentinel" is the dispensing equipment for packaged air conditioner units and consists of two sections. The inner unit is made of anodized aluminum and measures 15¾ in. by 9⅛ in. by 4⅛ in. The outer cover is 16⅛ in. by 9⅝ in. by 5⅛ in.

In use, the Sentinel is fastened to the packaged air conditioner so that the vapors from the evaporation chamber are drawn into the air conditioning air stream. Its design permits a gradual feeding of fresh solid odor counteractant into the chamber as the charge in the evaporation chamber is exhausted, according to the company. The Sentinel unit has a capacity of eight Solidaire pieces and is said to be sufficient for air conditioners up to 5 tons.

FLEXON VIBRA-SORBERS®
resist vibration fatigue

Flexon Vibra-Sorbers are corrugated flexible metal connectors for absorbing vibration and noise in compressor systems.

They are manufactured of high quality special bronze alloy excellently suited for freon and methyl chloride. The Vibra-Sorbers' precision construction, uniform wall thickness and balanced corrugations provide maximum resistance to fatigue under constant flexing and vibration.

For effective, economical vibration control, use Flexon Vibra-Sorbers—U.L. listed in sizes ¾ through 1½" I.D. Larger sizes to 8" available. Ask for Bulletin 139.

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Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
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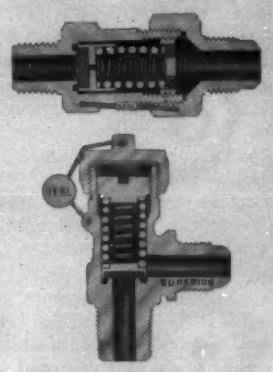

Superior now offers the most complete range of approved pressure relief valves in the industry. All valves have been designed and constructed in accordance with the standards of the ASME, code ASA-B9 and municipal governing bodies.

Styles: atmospheric, straight-thru, angle, and direct-high-to-low-side. In brass for refrigerants, in steel for ammonia service.

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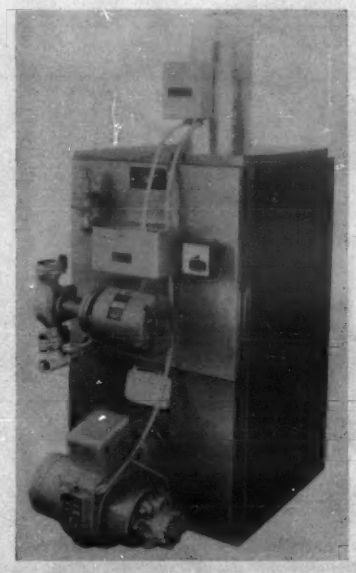


Embassy Has New Residential Boiler

A new oil-fired boiler for residential applications is now being marketed by Embassy Steel Products, Inc., Dept. AC&RN, 890 Stanley Ave., Brooklyn 8.

The Type S boiler is square in design. One of its features is the specially designed, pre-cast refractory combustion chamber. The chamber "has ample combustion space and eliminates flutter, throbbing, or pressure rumble," the company said.

The boiler is guaranteed for five years and is available in four models. It is shipped fully assembled for fast installation or completely disassembled without trim, according to the company.

Offer Auto Cooling Hose, Reusable Couplings

A "valuable contribution to simplified installation and servicing" of automotive air conditioning and refrigeration systems is provided by the new line of Refrigerant-12 hose and reusable couplings being introduced by The Imperial Brass Mfg. Co., Dept. AC&RN, 6300 West Howard St., Chicago 48, the firm announced.

"To eliminate costly inventories of made up hose assemblies, Imperial is offering the hose in 50-ft. coils together with a variety of hose couplings, so that any desired hose assembly can readily be made up," it was stated. "Hose couplings are designed so that they can be used over and over."

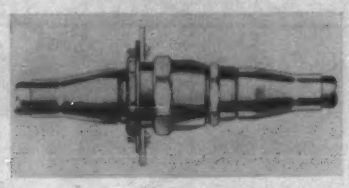
The hose is designed to operate satisfactorily in the temperature range of -20° to 250° F., with recommended maximum working pressure of 350 p.s.i. Hose is available in five sizes from 3/16 in. to 5/8 in. i.d. The hose has an inner seamless tube of synthetic rubber, reinforced with cotton braid, plus an outer cover of cotton braid impregnated with synthetic compound.

Imperial's cadmium plated steel reusable couplings are designed to assure maximum flow, the company said. Pipe thread ends are the "Dryseal" type. Female 45° flare swivel, male 45° flare connectors, and male pipe thread connectors are available in the standard sizes.

A complete package assortment of couplings and hose and assembly mandrels can be obtained together with a 21-drawer steel cabinet.

Get your copy **Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzalez—25¢ each.** Mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

Aeroquip Offers Improved Self-Sealing Coupling



A greatly improved self-sealing coupling, the "5500 Series," has been developed for air conditioning and refrigeration applications by Aeroquip Corp., Dept. AC&RN, Jackson, Mich., the firm announced.

The new coupling is primarily for use on commercial and residential units, where evaporator and condenser sections are built separately. It is suitable for use with numerous refrigerants, including Refrigerant-12 and 22.

Hunter Announces 3-Hp. 'Cargo Coolers'

A new 3-hp. series of Hunter "Cargo Coolers," models H-30 and HE-30, for truck refrigeration in the down-to-zero and medium temperature ranges has been announced by Hunter Mfg. Co., Dept. AC&RN, 30525 Aurora Rd., Solon, Ohio.

The new hydraulic-drive units maintain thermostatically controlled temperatures down to 0° in 10-14-ft trucks with insulation 4 in. thick or more, and medium temperatures, in the 32° to 50° range, in trucks up to 18 ft. long with insulation 3 in. thick or more, the company stated.

Sheet Metal Brake Can Be Used on Job

A new model of the Fayette sheet metal brake has been introduced by the Special Products Div., Fayette Mfg. Co., Dept. AC&RN, Morenci, Mich.

The model, weighing 80 lbs., features a fold-up stand for easy transportation, even in the trunk compartment of a passenger car, it was pointed out. This makes it possible to form sheet metal parts and fittings right on the job, the company said.

The Fayette unit forms any sheets up to 20 gauge in most required shapes. Uniform pressure along the entire 36-in. shoe is controlled by cam action of both handles.

Recold Announces Small Air Handling Unit

Introduction of a new, small air handling unit designated "AH-24," to be used for heating, cooling, or ventilating, has been announced by Recold Corp., Dept. AC&RN, 7250 East Slauson Ave., Los Angeles 22.

The AH-24 is a horizontal unit 17¾ in. high, 26¾ in. wide, and 39 in. to 67 in. long (length varies according to number of coils used), with 2.4 sq. ft. of nominal coil face area and 1,200 c.f.m.

According to Recold, the unit features unusual flexibility: discharge may be top, bottom, or rear; motor may be mounted top, bottom, rear, or either right or left side; coils may have right or left-hand connections; filter access on flat filter box may be either side, top, or bottom.

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Thermo King Operations To Be Consolidated Under One Roof

MINNEAPOLIS — Thermo King Corp., manufacturer of mechanical refrigeration equipment for trucks and trailers, ship, and rail, is consolidating all of its operations under one roof.

This is being done with the move of the firm's general offices and engineering and service departments from 44 S. 12th St. into a newly-built, air conditioned addition to its plant in the Minneapolis suburb of Bloomington, announced J. A. Numero, president.

With the addition of the newly-constructed, 45,000-sq. ft. building at 314 W. 90th St. in Bloomington, space for offices and manufacturing will total 260,000 sq. ft. Thermo King's assembly operation, production offices, and the service products division have been located at the Bloomington plant since 1956.

The Consulting Engineer's Column

Aim of this column is to present information of particular and current interest to Consulting Engineers, and those active in application engineering work generally. The editors invite contributions to the column from all who are engaged in such activity.

When Harold Brehm of the firm of Hellmuth, Obata & Kassabaum, Inc., firm of architects in St. Louis, spoke before the University of Missouri conference on air conditioning on "Relations Between Architects, Engineers, and Contractors," he unveiled some amusing sketches showing—in somewhat exaggerated form—how each would like to see a building designed.

The sketches are reproduced here with Brehm's comments:

"The Architect often appears to feel that his contribution, in terms of architectural effect, is of prime importance, and that all allied trades and skills are only supplemental. He loves to design all-glass buildings, and cannot understand why the Engineer doesn't do something spectacular to prevent the clients' paying high premiums in initial cost, maintenance, and operation, such as a movable reflector to shield the building from the sun's rays, or perhaps heat absorbing trees.

"On being told of the enormous quantities of conditioned air required to handle the air conditioning loads with such a design, he generally has innumerable ideas on how to design the system.

"For example, he might suggest two 8 in. x 4 in. grilles located one on each side of the elevators, each to handle 14,300 c.f.m., same to be carefully designed to fit the decor, and fit precisely to the brickwork.

"So far as distributing this air to the proper locations, the problem, in his eyes, is very minor. It can be bounced off the mural wall that he intends to put in front of the grille.

"An equipment room measuring 4 x 8 x 8 ft. should be ample, he thinks, and he is very fussy about the design up on the roof, which will only be seen by riders in helicopters.

"The Engineer generally has the artistic sense of Grandma Moses minus her spectacles. His idea of artistry is a 4-in. cast iron drain pipe carefully centered in the main lobby.

"He would like to locate all equipment next to the lobby to shorten all pipe runs. Louvers should be placed on the front of the building without regard to location, since the building is only a shell to keep the mechanical equipment from getting wet.

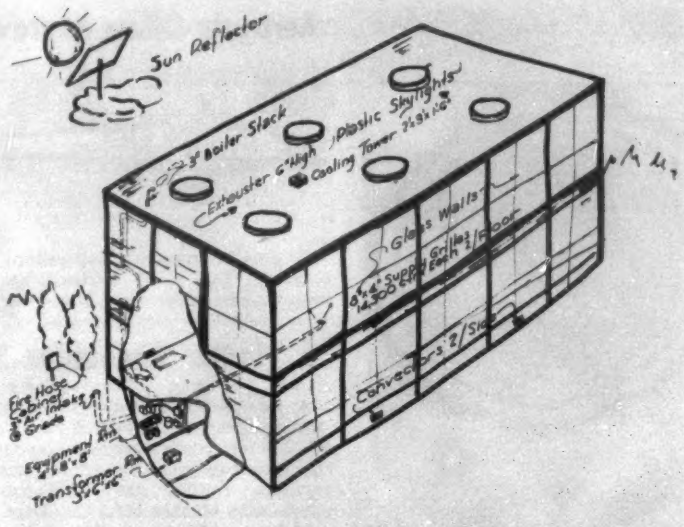
"The Engineer also would like to see construction with solid brick walls, and would stick an 8-ft. smoke stack, 80 ft. high, on the roof.

"The Contractor thinks the Architect and Engineer are both screwballs whose only aim is to confuse him and complicate his share of the work.

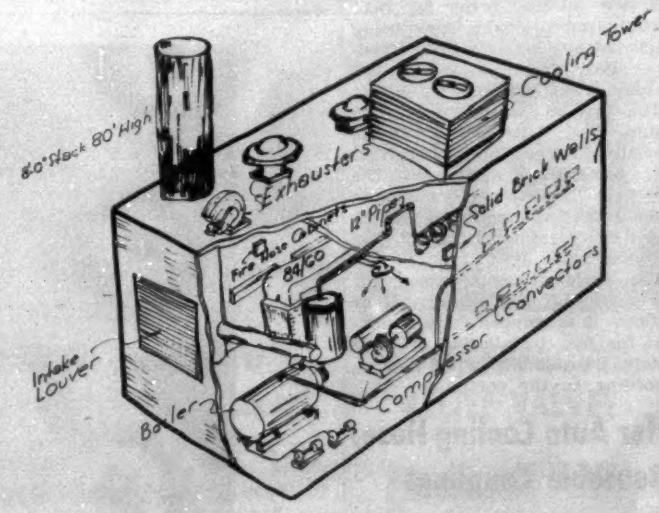
"If the drawings are complete with all details required, he squawks because he doesn't like the details, and also he can't nick the client for omissions. If details are missing, he contends the Architect doesn't know what he's doing.

"The Contractor's concept of a fine building is one that can be built using two sheets of drawings, from materials purchased from stock at Sears Roebuck, assembled at the shop, and erected with a one man crane at the site.

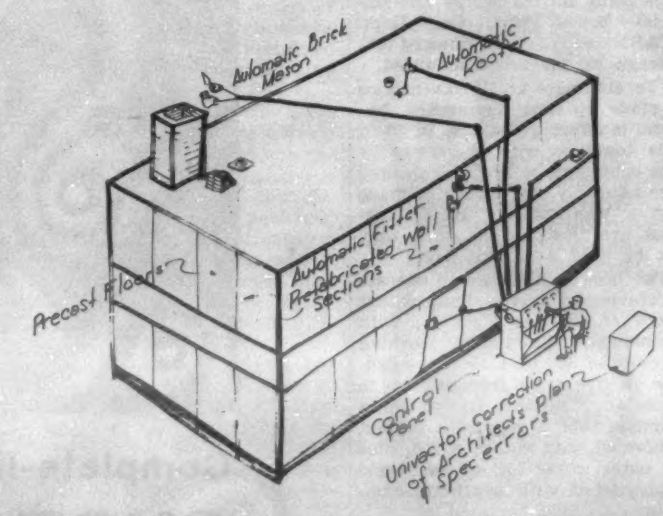
"He would also like something like a Univac electronic computer for correction of plan and specifications errors."



In this "slightly exaggerated" drawing are illustrated some of the architect's pet ideas, such as a glass-walled building with plastic skylights, a "sun reflector" to cut down the heat load, 8-in. by 4-in. supply grilles (two to a floor) to handle all the air conditioning, and an equipment room no larger than 4 by 8 by 8 ft.



For the engineer, the external part of the building is often just a shell to keep the mechanical equipment from getting wet. His idea of artistry may be the careful centering in the lobby of a 4-in. cast iron drain pipe. He likes to pile equipment on the roof.



The contractor often regards the architect and engineer as "screwballs" who only complicate his share of the work. His concept of a fine building may be one that "can be built using two sheets of drawings, from materials purchased from stock at Sears Roebuck, assembled at the shop, and erected with a one-man crane at the site." He'd like a handy gadget like "Univac" to correct "errors" made by the architect and engineer.

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This principle eliminates: Noise, Motors, Wiring, Maintenance, Operating Problems. WRITE Airvec Dept., Edwards Engineering Corp. Manufacturers Agents Inquiries Invited.

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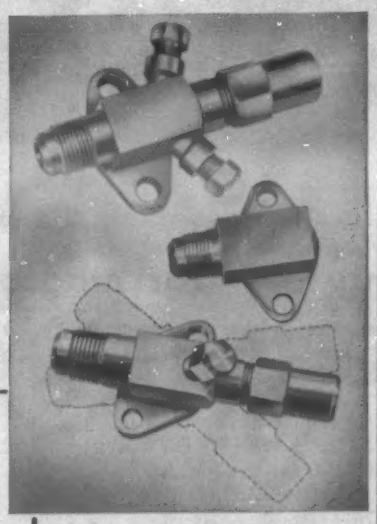

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Refrigeration Problems
And Their Solution
(As Written by Paul Reed)

Drying Refrigerant In the Cylinder

CHARGING REFRIGERANT INTO THE SYSTEM AS A LIQUID

There are two methods of adding refrigerant to a system—as a vapor and as a liquid. One is to connect a cylinder of refrigerant to some part of the high side of the system, up-end the cylinder and literally "pour" liquid refrigerant into the system.

If the cylinder is as warm or warmer than the high side of the system, there is usually no trouble in putting the refrigerant in although it may be necessary to relieve the high-side pressure by purging it to the atmosphere or preferably, to save refrigerant, to the low side.

Since it goes in in liquid form, refrigerant can be added quickly, and this method is used for the larger systems to which a great deal of refrigerant must be added. Charging refrigerant into the system in liquid form often saves a good deal of time, if a considerable amount of refrigerant, say 20 lbs. or more, must be added to the system.

The best place to connect the cylinder, when adding refrigerant as a liquid, is to the receiver, although it can be put into the condenser or the liquid line. On some units, it may be difficult to find a suitable connection on the receiver, especially if, as is usually the case with the larger systems, the lines are soldered, brazed, or welded to the valves.

It is good practice on such systems to provide a charging valve on the receiver, when the equipment is originally installed.

One disadvantage of the liquid charging method may be that if there is any dirt, scale, or other foreign matter in the refrigerant cylinder, it goes with the refrigerant into the system. Service cylinders are often not very clean, so it is good practice to connect a strainer into the charging line.

CHARGING REFRIGERANT INTO THE SYSTEM AS A GAS OR VAPOR

For the smaller systems, to which we wish to add a small amount of refrigerant, say up to 10 lbs. or so, the vapor method has advantages. We connect a charging tube from the refrigerant cylinder to the suction service valve on the compressor, and with the cylinder in an upright position, we draw the vapor out of the cylinder and into the compressor.

If it is a small cylinder or if it is a rather large compressor, the cylinder is apt to get cold quickly; and, of course, the colder the cylinder gets, and consequently the lower the pressure of the refrigerant in the cylinder, the slower we can remove the refrigerant from the cylinder into the system.

This is easily overcome by setting the cylinder into a bucket or tub of warm water (but no hotter than you can stand your hand in). The heat from the water raises the pressure and we can charge even 10 or 15 lbs. into a system in a short time.

GAS CHARGING USUALLY EASIER AND SAFER

One advantage that the method of charging the refrigerant into the system as a gas has over charging it in as a liquid, is that, as a rule, it is easier and more convenient.

Liquid refrigerant must never be charged into the suction service valve, the suction line, or other part of the low side of the system from which the liquid may get into the compressor.

Refrigeration compressors are designed to pump vapors or gases only. Their clearances and valve passages are too small to pass liquids rapidly, so high hydraulic pressures are developed that cause breakage of valves, rods, or other parts.

Moreover, liquid refrigerant in the crankcase dilutes the crankcase oil and causes it to lose lubricating value. This can be so severe as to ruin a compressor in a few days or even a few hours.

Also, liquid refrigerant in the oil in the crankcase causes the oil to foam a great deal, which throws an excessive amount of oil on the cylinder walls and past the pistons.

So much has been written on the evils of "liquid slugging" and "oil pumping," that it seems unnecessary to repeat it here, but some servicemen get in a hurry and "dump" liquid refrigerant into the compressor or the suction line.

Charging the refrigerant in as a gas enables us to more accurately estimate when we have a full charge in the system, for the gas is going in gradually; whereas, when charging refrigerant into the system as a liquid, we put in several pounds at a time, so it is an easy matter to get too much in.

GAS CHARGING IS CLEANER

Charging refrigerant into the system as a gas also has the advantage of leaving dirt, scale, and other foreign matter, even oil, in the refrigerant cylinder. This is a negligible factor when charging direct from factory-filled cylinders, for these cylinders are inspected in the factory and if dirty internally, they are thoroughly cleaned. So we do not have to worry about dirt, scale, oil, etc., in factory-filled cylinders.

Service cylinders are apt to be comparatively dirty, for in time they accumulate dirt, scale, and other material, especially if they have been used to hold refrigerant withdrawn from a system either because of over-charge originally, or to enable the serviceman to work on the high side of the system.

IS GAS CHARGING DRIER?

Here is where the erroneous assumption comes in. It is very commonly said that another advantage of charging refrigerant into the system as a gas is that if, as is sometimes true of a service cylinder, there is a very considerable amount of moisture in the cylinder, the moisture is left behind with the dirt and scale and the vapor drawn off is dryer than if liquid refrigerant were removed.

This sounds reasonable; for water boils at 212° F., so it seems that since Refrigerant-12 is boiling off at say 70°, the water would not boil and thus would stay in the cylinder. Therefore, the Refrigerant-12 vapor coming off would be dry—much dryer than

(Concluded on next page)

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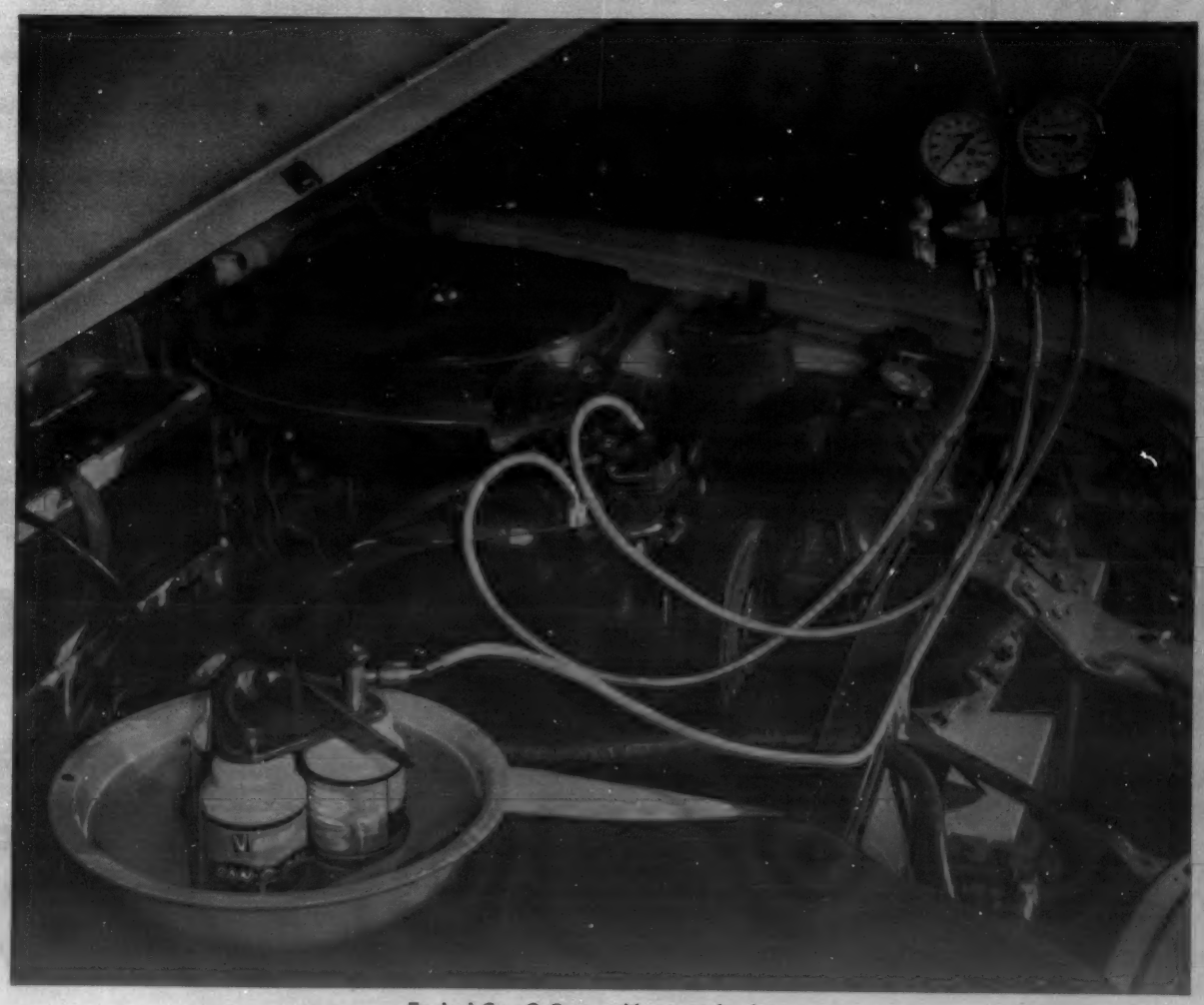

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The multi-opener devices for Can-O-Gas pictured here provide the simplest and most economical way of recharging automobile air-conditioning units. There are 5 reasons:

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Drying Refrigerant In Cylinder--

(Concluded from preceding page)

the liquid left in the cylinder.

Yes, it sounds reasonable, but it is untrue; and in fact, just the opposite is true. That is, the vapor that "gasses off" is much wetter than the liquid left. If we examine the matter, and study it carefully, it is quite plain why this is so.

John Bopp of Ansul Chemical Co. points out that they had noticed in their laboratory, that if they drew Refrigerant-12 vapor from a cylinder of Refrigerant-12, analysis of the liquid Refrigerant-12 left in the cylinder showed a lower moisture content than before.

VAPOR WETTER THAN A LIQUID

That is, moisture was not all left behind; instead, moisture went into the vapor from the liquid. In fact, since the liquid Refrigerant-12 became drier, the moisture content of the vapor per pound of refrigerant, must have been greater than that of the liquid.

So here was the "hard fact" which had to be accepted and explained. A little study and some calculations of moisture content and of vapor densities as controlled by Dalton's Law show why removing Refrigerant-12 vapor will reduce the moisture content of the liquid remaining in the cylinder.

This has a practical bearing, for it means that the first few pounds of Refrigerant-12 vaporized off from a full cylinderful, is "Wet" compared to the remainder of the Refrigerant-12. So the first few pounds vaporized off should be taken off through a drier, especially if it is to be used in a freezer. That is, we must recognize that the first few pounds will be relatively wet, and we should take extra precautions to dry it.

Also, if we need extra-dry Refrigerant-12 for a low temperature job, we can get it by gassing off a certain amount of Refrigerant-12 vapor, and the remaining liquid Refrigerant-12 will be extra-dry.

Southern California Contractor-Union Meeting Postponed

SAN FRANCISCO—A meeting between representatives of the Refrigeration & Air Conditioning Contractors Association of Northern California and eight locals of the United Association in the greater Bay area, to discuss an area wide contract with possible "freedom of movement" provisions, was postponed indefinitely by the union.

Postponement of the Sept. 16 meeting followed a meeting of the union representatives and Edmund G. Brown, California attorney general running against William Knowland this fall for the governor's chair.

You Asked About It

From the many requests for information it receives, the NEWS will select and publish some of general interest. In many instances, the answers will be supplied by authorities in the industry. If you do have a question or problem concerning which you think the NEWS might be able to help, be sure to state the problem clearly, and provide as much information as possible.

Q. Your Technical Center articles on oil separators were interesting, but they didn't help me with my specific problem. Here's the story.

A methyl system about 20 years old. On one condensing unit there is a walk-in, a salad table, a reach-in, and one Temprite water cooler.

Last year when I started this equipment up, everything was OK except the water cooler. All indications were that the float valve was defective, so I changed it; it worked a little better and we got by last summer all right. But this summer I had the same trouble, so I removed the cooling unit on the water cooler and found about a gallon of oil in the tank. I removed the oil and everything is OK again. I forgot to mention that this equipment is idle every winter.

I wanted to put a new oil separator on the unit, but the customer contends that this was the first time he had trouble in 20 years, so it's unlikely to happen again. He wants to know if the oil separator on the unit can be fixed. Sometime ago he had trouble with another unit and the serviceman removed the separator, so he had me take it apart to see what was the matter with it.

I found the needle valve badly scored, as is the valve seat. Can these be replaced, and is it practical to do so? (This is a Kelvinator unit, but I can't find any identification on the oil separator itself.)

H.G.—Newport, R. I.

A. James W. Archibald, sales manager, Temprite Products Corp., answers this question.

"The instantaneous water cooler described depends for its operation on the "flooded refrigerant principle" wherein the water-cooling coils are immersed in liquid refrigerant, the temperature of which is controlled by a constant-pressure valve.

"In such an evaporator where instantaneous cooling is the design objective, and generally subjected to high demand, intermittent load, the turbulent boiling action of the refrigerant prevents accumulation of entrained miscible oil in the evaporator.

"Since the installation in question is not operated during winter months and the cooler is subjected to very light load of heat leak, there is no turbulent boiling action of the refrigerant, and in the period of 20 years the oil has settled out of solution and resulted in oil logging.

"The problem can be eliminated by closing the liquid line shut-off valve on the Temprite instantaneous cooler during the winter shut down period.

"If the oil separator is of Temprite design, it is repairable, and any worn parts can be replaced. . . ."

WHAT . . WHEN . . WHERE

Midwest Association, Refrigeration Service Engineers Society Educational Conference
Oct. 9-11, Sheraton-Jefferson hotel, St. Louis.

Refrigeration & Air Conditioning Contractors Association Convention
Oct. 12-15, Broadmoor hotel, Colorado Springs, Colo.

Air-Conditioning & Refrigeration Wholesalers Meeting
Oct. 22-24, Sheraton-Palace, San Francisco.

National Electrical Manufacturers Association Meeting
Nov. 10-14, Traymore hotel, Atlantic City, N. J.

National Association of Practical Refrigerating Engineers Meeting
Nov. 11-13, Kenilworth hotel, Miami Beach, Fla.

Better Heating-Cooling Council Meeting
Nov. 17-19, New York City.

National Commercial Refrigerator Sales Association Convention
Nov. 17-19, Golden Gate hotel, Miami Beach, Fla.

Refrigeration Service Engineers Annual Convention
Nov. 21-24, Neil House, Columbus, Ohio.

American Society of Refrigerating Engineers Meeting
Dec. 1-3, Roosevelt hotel, New Orleans.

National Warm Air Heating & Air Conditioning Association Convention
Dec. 4-5, Statler Hilton, Cleveland.

Dairy Industries Exposition
Dec. 8-13, Navy Pier, Chicago.

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1958 Can Be A Better Year Than You Might Expect!

The fourth quarter of 1958 will tell the story for many a company in terms of profit and loss. But one important fact stands out — *there's still plenty of time to increase your sales!*

AIR CONDITIONING & REFRIGERATION NEWS — with highest paid circulation in history (23,059 average paid — ABC Publisher's Statement period ending June 30, 1958) — is ready *every week* to carry your "ask for the order" advertising to just about everybody in the industry.

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AIR CONDITIONING & REFRIGERATION NEWS
The Newspaper of the Industry

Acme's Smaller Water Chillers Allow Dramatic Reduction In Size, Weight of Equipment In New Lines

By George M. Hanning

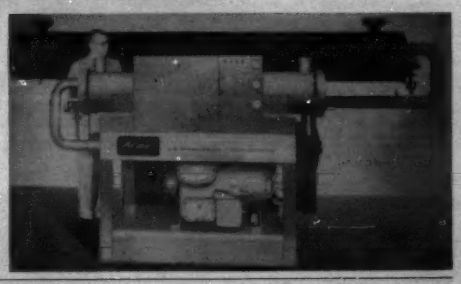
JACKSON, Mich.—New water chillers that pack more heat transfer capacity in less space than ever before, making possible dramatic reductions in size and weight of equipment, were introduced here recently by Acme Industries, Inc.

Along with the chillers, Acme displayed for its greatly expanded field force of more than 150 men and the trade press a new line of self-contained packaged air conditioners ranging from 3 to 60 tons, and new room air handling units.

With these new products, Acme can, for the first time, supply under its own name all the equipment needed for a complete air conditioning system. They will enable Acme representatives to sell a greater percentage of jobs, according to R. C. Robertson, director of sales.

Robertson said that Acme now has full-time representation in most territories, and has entered new markets. The company has doubled its sales quota for 1959.

HOLDING NEW compact 3-ton water chiller to demonstrate its lightness and to show the tight arrangement of tubes and baffles are Peter A. Weatherwax, executive vice president of Acme Industries, Inc., and his father Kenneth A. Weatherwax, president.



DRAMATICALLY SMALLER than 60-ton model DD that it supplants (background) is the new HE Flow Therm 60-ton model in foreground.

While Acme will avowedly put more stress on field sales next year, Peter A. Weatherwax, executive vice president, emphasized that the company would not neglect its original equipment manufacturer business.

Still Interested In OEM Sales

"We are still interested in OEM sales," he said, "and we are going to sell as much as possible of our equipment to whomever wants to buy it."

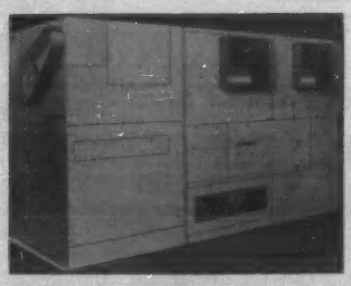
Walter M. Hassenplug, vice president and director of engineering, explained that the new smaller, lighter water chillers were accomplished by a more compact arrangement of the heat transfer surface, plus a more effective use of that surface.

Tubes are smaller and are mounted closer together. New plastic polyethylene baffles and spacer rods fit more snugly around the tubes and to the outer shell. In addition, tubing pattern is on a triangular pitch, rather than on the square.

As a result of these changes, water by-pass between tubes and shell and through loose fitting baffles is eliminated, W. M. Hassenplug, vice president and

The new arrangement causes no increase in pressure drop in either the water or refrigerant, he added.

Size was also reduced substantially by the use of ¾-in. foam plastic "Armaflex" insulation in place of the 3 in. of rock cork insulation plus protective metal jacket on previous models. With the new insulation, a protective jacket is not necessary, Hassenplug said.



ACME's new self-contained packaged air conditioner has a range of capacities from 20 to 60 tons. "Store type" coolers range from 3 to 15 tons.

New Chillers for Water Only

He pointed out that the new chillers are for use with water only. For special applications where brine and other fluids are to be chilled, Acme will continue to make larger chillers. The smaller chillers are suitable for 90% of applications, he said.

As a result of these developments, a 25-ton chiller for example, has been reduced in length from 100 in. to 66 in. and in weight from 1,160 lbs. to 680 lbs. Other models show similar reductions.

Robertson said the smaller size and lighter weight of the units are advantageous for many reasons. These include less floor space and headroom, more freedom in placement and lower building costs resulting from reduced floor loadings, and greater ease in handling, especially through doors and other tight places in buildings.

"We are giving valuable space back to the building owner and making the equipment easier to install," he declared.

For instance, he said, a Chicago contractor who would need riggers to hoist a 100-ton chiller to the roof of a nine-story building, could take one of the new units up in a freight elevator.

Water chillers are made in the "RG Flow Cold" series from 3 to 30 tons capacity, in the "DE Flow Therm" series from 20 to 125 tons' capacity with direct drive compressor, and the "HE Flow Therm" series in capacities of 20 to 60 tons with hermetic compressor.

All units are available without water-cooled condensers for use with an evaporative condenser.

Packaged Conditioner Described

Acme's new packaged air conditioner consists of a hermetic compressor, a direct expansion cooling coil, a water-cooled condenser, a centrifugal blower, refrigerant circuit, and necessary safety and operating controls contained in a sheet metal cabinet. All internal wiring and piping are completed at the factory.

The larger units—20 to 60 tons' capacity, have a common 90-in. height and are completely serviceable from the front, except for electrical connections and filters.

Evaporative condensers are mounted so they can be put on either the right or the left side of the package as desired. The changeover can be made in the field, if desired, Robertson said. Steam coils are also available to make the unit a complete year-round system, he added.

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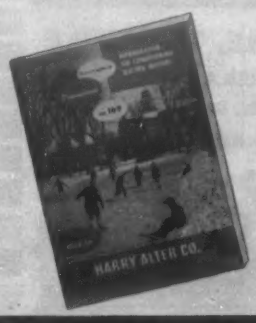

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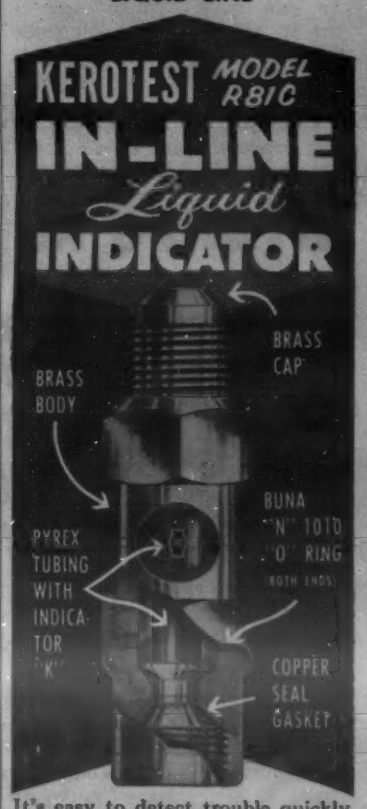

It's easy to detect trouble quickly in refrigeration lines with this indicator. Letter "K" is etched on pyrex heat-resisting tube which shows through sturdy brass body at sight port. When "K" is not magnified, it indicates a shortage of refrigerant or a clogged line. Available in male and female flare sizes. Maximum operating pressure —500 p.s.i. and maximum temperature 200° F. Easy to install.

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TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

A Casual Look at Heat Pumps

Everybody knows:

that heat pumps are the greatest thing since the discovery of fire;

or, they are the most overrated equipment on the market;

heat pumps will only work below the Mason-Dixon line;

but, one fellow has one in the Hudson Bay area of Canada;

Ninety per cent of your electrical bill will be for supplemental resistance heat;

yet, total heating-cooling cost for a year is in same order of magnitude as fossil heating plus separate cooling installation.

Misinformation and misconceptions about heat pumps are numerous — some favorable, some not. Unfortunately, the play-them-close-to-the-chest philosophy of some heat pump manufacturers and utility companies encourages the circulation of erroneous information.

Admittedly, heat pumps are in what can realistically be called a field development stage, and there will be certain design and manufacturing defects. Defensively, some people involved are attempting to prevent knowledge of such flaws from reaching the industry at large. As one utility sales engineer put it, "We want to sell these things; why tell people that there are things wrong with them?"

This engineer insists that all new products have development troubles, but they "all solve themselves in time." Apparently without the help of people.

The picture is not completely black, however. There are those enthusiastic supporters of heat pumps who are willing to discuss the things which can be improved, the things which have gone wrong. These people feel that knowing the nature of difficulties will keep the uninitiated from imagining enormous difficulties all out of proportion to actuality.

But, aware of tender feelings of those on the defensive, most such enthusiasts request anonymity both for themselves and for the geographic locality they discuss.

Random Observations On Heat Pumps

In the midst of a thorough study of the heat pump, the NEWS at this time presents random observations from several authorities in the field.

Probably the most commonly held opinion about the heat pump is that it is applicable only below the Mason-Dixon line where the climate is temperate. (Unless otherwise stated, our discussion of heat pumps will be limited to the air-to-air type.) The idea here is that when outdoor temperatures drop below freezing, all sorts of difficulties arise with defrost problems, excessive power consumption, units kicking completely off when they are most needed.

One authority, who has been responsible for the successful installation of over 100 heat pumps considerably above the Mason-Dixon, counters with these arguments:

1. Houses in the South are built for the South. By Northern standards, these houses have holes in them. On any really cold day in the South, he insists, you can feel definite cold drafts in the typical house.

2. Application problems in milder climates can be greater because, although the average temperature is lower, the actual range between extremes may be wider than design temperatures in less mild climates.

3. "If there is a restriction on the use of heat pumps, it is the cost of electrical power. The Mason-Dixon line restriction is a hoax. If a house were built in the South as we recommend it be built in the North for heat pumps, you could heat that house with birthday candles."

As winter temperatures drop below a predetermined point, most heat pump controls will automatically call for auxiliary heat. This heat is supplied in the form of resistance heaters in the plenum. On most units these resistance heaters also kick on automatically during a defrost cycle to prevent blowing cold air into the room.

How Much Supplemental Heating Is Needed?

Talking with the uninitiated, the NEWS finds that the feeling is general that this resistance heating accounts for 50-90% of the power consumed during a heating season.

Contrary to these beliefs, successful heat pump installations whose power consumption is metered show resistance heat accounts for 10-20% of total electrical power used for heating. One authority insists that the 10% figure can become a realistic design figure for a good installation.

The need for supplemental heat depends on the *balance point* of the house. Here's how it works.

Say you have calculated the heat loss of a structure from 0 ° to 75° F. Keeping in mind that heat pumps will give off a certain amount of heat at each outdoor temperature, somewhere along the line—at some outdoor temperature—the capacity of the heat pump will balance the heat loss of the structure. This is the balance point of the house—say 20°.

With a 20° balance point, one outdoor thermostat may be set for 23-24°; a second may be set for 0°.

In a properly designed system, supplemental heat will not come on even though outdoor stat calls for it, so long as the *indoor* thermostat hasn't fallen more than 1¾° while the compressor is running.

A contractor reports being in a house with an outdoor temperature of 0°, unit balance point of 23°, yet no supplemental heat was on. In this case, the sun was bright and solar load kept inside stat from demanding more heat, even though outside stat was calling for some.

Once supplemental heat comes on, it stays on long enough to make up the design drop, in this case 1¾°—no longer.

The relatively infrequent need for supplemental heat in heat pumps poses a problem for electric utility companies, which naturally favor heat pumps to equalize their seasonal peak demands. However, they are in the position of having to supply maximum power when supplemental heat is needed, even though the maximum power will seldom be in demand.

Night Turndown Habit Means Excess Power Use

A very frequent cause of excessive power consumption due to supplemental heat is night turndown—a habit ingrained in millions.

In such cases, the thermostat is turned up in the morning and is fooled into thinking there is a need for supplemental heat, and it cuts in all resistance heat available, not merely the first band.

Commercial installations use even less supplemental heat because there is usually more internal load than in a residence.

It is generally agreed that perhaps the most important phase of heat pump operation is defrost control when the unit is operating on heating cycle. On one make, if controls are not functioning properly when you go into defrost cycle, control is such that it turns on supplemental heaters whether or not they are needed.

Then controls do not cut out resistance heating when compressor turns off, resulting in overheating and a high power consumption.

At below freezing temperatures, frost builds up on the outside coil—the evaporator. When it builds up enough, air flow is reduced and a sensing element detects the reduction, calling for defrost. During defrost, of course, the unit reverses cycle and indoor coil becomes evaporator; thus the need for supplemental heat to temper the air for the minute or so required for defrost.

Servicing More Difficult

Servicing of heat pumps requires more training than normal refrigeration. For one thing, there are more complex mechanical and electrical controls than encountered in separate cooling or heating systems. For another, certain characteristic behavior which a serviceman has come to expect of condensing units may differ considerably.

An example: Normal Refrigerant-12 head pressures may reach 125-135 p.s.i. In heat pumps head may reach 165. Experienced refrigeration serviceman, encountering these pressures for the first time, will speed up his outdoor fan to get more air across the condenser coil in the hope of lowering head. This overloads the outdoor air fan; motor kicks out on thermal overload, and compressor short cycles.

Another example: Heating people accustomed to working with 160-180° air and low velocities will alter air flow of heat pumps which, to them, will seem too fast and too cool.

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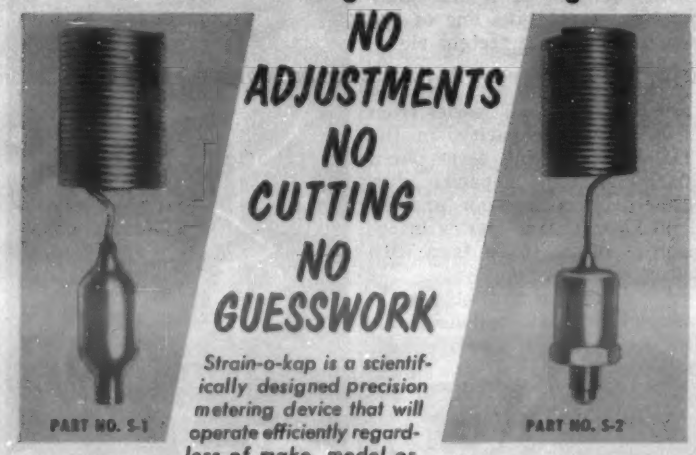

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Airtemp Appointments, Plans--

(Concluded from Page 1, Col. 4)

grams with which Airtemp intends to take full advantage of an expanding market and to capture and hold a substantial share of this market."

It is presumed that these moves indicate Airtemp may place increased emphasis on room air conditioners.

Ogden succeeds J. F. Knoff, who resigned, as did M. T. Bard, director of branch operations, and R. L. Forsberg, director of market research. Replacements for Bard and Forsberg had not been named at press time last week, according to Chrysler.

Established in 1934, the Airtemp Div. is part of Chrysler's Special Products group, it was pointed out. Gorey was appointed to head the group in April of this year by Thomas F. Morrow, group vice president—Defense and Special Products.

Gorey said that industry sales of air conditioning equipment — including commercial, residential, and automotive units—are currently running at an annual volume of $700,000,000. "We believe that within the next five years this volume will be doubled," he added.

The demand for passenger car air conditioning alone has almost doubled since 1956, it was stated. During the 1958 model run, Gorey said, factory installation of air conditioners on "Imperial" cars reached 33.3% of production and installations on the company's other four lines of cars showed increases over previous years.

A substantial expansion of the company's line of air conditioning equipment, as well as an intensified merchandising program, are being worked out by the Airtemp Div. staff in close cooperation with Chrysler's marketing specialists.

Airtemp distributors and major direct dealers will receive these plans at the division's national business conference in Dayton Dec. 4-5.

A Chrysler spokesman indicated that no further statements on Airtemp plans would be issued for the time being.

Augenstein brings to Airtemp 23 years of experience in the electrical appliance sales and service fields with General Electric. He joined G-E in 1935, after graduating from Hiram (Ohio) college, and remained with that firm until coming to Chrysler. In 1955 he was placed in charge of all G-E room air conditioning activities.

Ogden attended Ohio university, graduating in 1934. After six years' experience in credit work, he joined RCA. He was midwest regional sales manager for the RCA air conditioning division when Whirlpool acquired that division. From 1955 until last year he was sales manager of Whirlpool's air conditioning division.

Last May, Ogden was elected chairman of the newly-formed room air conditioner section of the National Electrical Manufacturers Association and Augenstein vice chairman.

In addition to air conditioning, heating, and refrigeration equipment, Airtemp is producing gunnery fire control equipment for Army tanks under a $5,300,000 contract.

Since 1951, it was pointed out, Airtemp has delivered more than $55,000,000 worth of ordnance equipment under government contracts, and is also supplying air conditioning, valve, and electronic components for the Redstone and Jupiter missile systems.

Typhoon Line and Program--

(Concluded from Page 1, Col. 2)

their great profit potential and to commemorate Typhoon's 50 years in the air conditioning industry.

"The company, one of the oldest in the industry, started in 1909 manufacturing fans for cooling theaters," it was noted.

The national sales conference was held here Sept. 5-6. Typhoon officials said it was held early to give dealers an entire year to sell equipment without and post-season slump. The "Golden Rule" plan includes incentives for early sales.

The Golden Rule sales program includes a plan that will permit dealers to fill warehouses without paying for unsold equipment before the air conditioning season starts and a plan providing incentives for preseason sales.

Typhoon expects that the incentives contained in the preseason plan "will help dealers persuade people that they should install air conditioning while snow is on the ground."

Typhoon has also offered a trip to Mexico for each dealer who reaches a quota before Jan. 1 as an additional incentive in the "Golden Rule Plan."

New units using the 15-ton compressors have capacities of 15, 30, 45, 60, and 75 tons.

"The larger compressor assures full capacity operation at lower price than previous models of comparable capacity which employed combinations of smaller compressors," it was stated.

"The 75-ton unit is the first self-contained unit of its size and the largest on the market.

"The new line also includes advantages of previous Typhoon models: power reserve to assure full cooling capacity on hottest days; complete factory assembly including all internal wiring, leaving only simple connections for installations; compact size; all heavy gauge cabinet construction; tube-within-tube water-cooled condenser construction; and engineering that permits easy servicing."

Dunham-Bush Elects Mulcahey Director

WEST HARTFORD, Conn.—Cecil Boling, president of Dunham-Bush, Inc., has announced the election of James A. Mulcahey to the company's board of directors.

Mulcahey joined Bush Mfg. Co. as director of sales in 1951. He was elected vice president of Bush in 1954 and, upon consolidation of Bush Mfg. and C. A. Dunham Co. in 1956, became vice president and director of sales of Dunham-Bush.

RACCA Meeting--

(Concluded from Page 1, Col. 4)

Convention guest speakers will include John M. Rhoades, president of NAPC; Peter T. Schoemann, general president of the United Association; and George F. Taubeneck, editor and publisher of AIR CONDITIONING & REFRIGERATION NEWS.

Also on the program are two "Idea Trading Posts." One will help local association secretaries improve benefits for members. The other will blueprint the formation and operation of a local association.

Social highlights will include a reception and cocktail party Sunday evening, a family ox roast and western hoe down Monday evening, and the annual dinner-dance Tuesday evening.

In Los Angeles

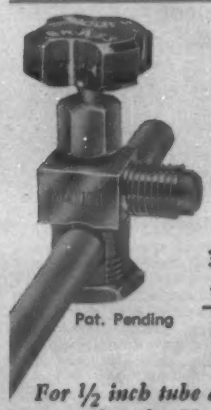
Proposal Would Require Licensed Operator on Truck Booms, Hoists

LOS ANGELES—A requirement that licensed operating engineers must be used with all booms or hoists on trucks or pickups has been proposed to the Board of Building & Safety.

The Operating Engineers Union is talking to members of the board about such an addition to the building code, reports Henry B. Ely of the Construction Employers Council.

Ely points out the proposal would affect every contractor handling equipment to the place of installation, including refrigeration, heating, and air conditioning contractors.

PERFORMANCE PROVED!
Madden HP-41
Hermetic Port Valve



1 VALVE PIERCES 4 TUBE SIZES!

3/16"	1/4"
5/16"	3/8"

Pat. Pending

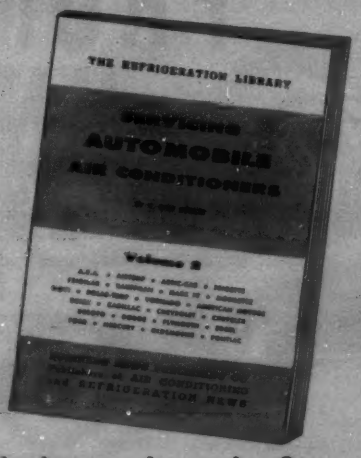
For 1/2 inch tube ask for the Madden HP-68

Write for free catalog R-358 listing other Madden performance-proved products: valves, fittings, charging lines, etc.

MADDEN BRASS PRODUCTS COMPANY
AURORA 6, ILLINOIS, U.S.A.
EXPORT: Ad Auriema 85 Broad St., New York, N. Y.

Now — JUST OFF THE PRESS
the Brand New Edition — Volume II of

Servicing Automobile Air Conditioners



Automobile air conditioning has experienced phenomenal growth. Over 400,000 units sold in 1957 alone. Someone must service these units. Here is complete service information — at your finger tips! All nationally known makes are represented — 24 brands *including* the independents.

A.R.A. • Airtemp • Artic-Kar • Frigette • Frigikar
Kauffman • Mark IV • Mobilette • Novi • Polar-Temp
Vornado • American Motors • Buick • Cadillac
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Complete factory recommended service information — with diagrams and illustrations for all makes — Volume II covers 1956 and 1957 models — 24 chapters: Only $2.00 each.

If you already have Volume I of Servicing Automobile Air Conditioners (for models thru 1955), here is your chance to bring your service information up-to-date! Order Volume II today. Use coupon below.

Your money refunded promptly if not completely satisfied — Just return the book within 10 days.

Special offer:
Both Volume I ($2.00) Plus Volume II ($2.00) can be yours for only $3.50 — if you order now!

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Check one:
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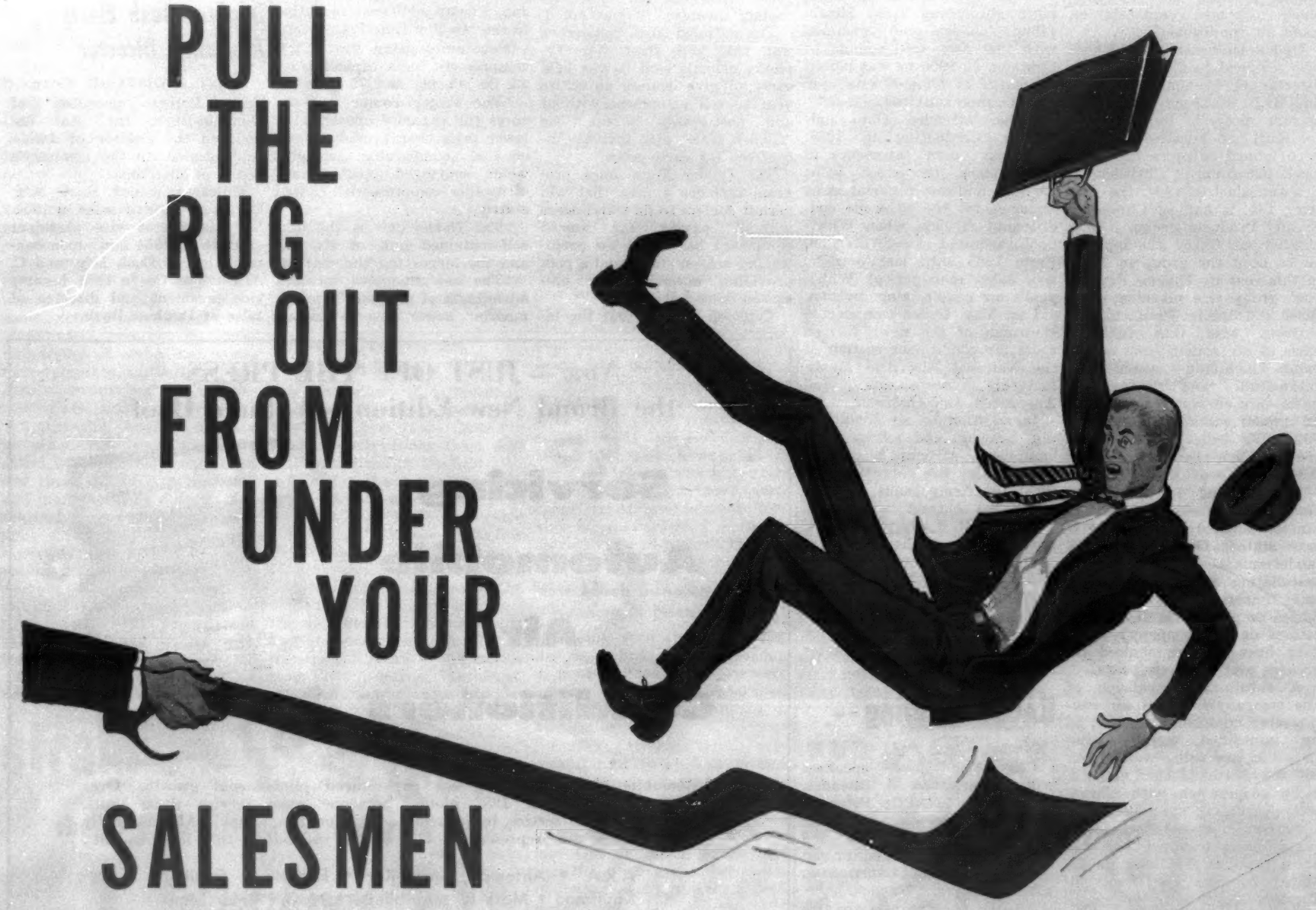
CITY ..... ZONE ..... STATE .....

"Manual sent postpaid if remittance enclosed." 10-6-58

HOW TO PULL THE RUG OUT FROM UNDER YOUR SALESMEN



The day of *salesmanship* is here—and no one knows it better than your competitor! That's why your salesmen need every bit of backing they can get.

That's why failing to advertise *regularly* can amount to pulling the rug right out from under your salesmen, leaving them without the competitive advantage of having their sales story seen *repeatedly* by the men they must sell.

Every call your salesmen make is more important than ever. You can help make each call more effective by pre-selling prospective customers through industry-wide advertising in AIR CONDITIONING & REFRIGERATION NEWS, the Weekly Newspaper of the Industry.

Use NEWS advertising regularly and consistently for maximum help to your salesmen.

AIR CONDITIONING & REFRIGERATION **NEWS**

The Newspaper of the Industry

RESIDENTIAL — COMMERCIAL — INDUSTRIAL

The leading air conditioning publication with highest paid circulation in the field.

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●

NEW YORK, 521 FIFTH AVE.,
MURRAY HILL 2-1928-9, ROBERT M. PRICE.

●

CHICAGO, 134 S. LA SALLE ST.,
FRANKLIN 2-8093, REX SMITH.

●

LOS ANGELES, 4710 CRENSHAW BLVD.,
AXMINSTER 2-2501, JUSTIN HANNON.

●

DETROIT, 450 W. FORT ST.,
WOODWARD 2-0924, AL SCHILDHAMMER.

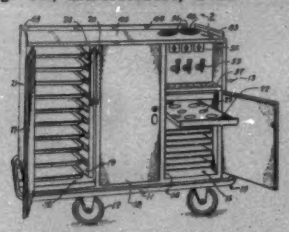
PATENTS

Week of August 5

2,845,695. METHOD OF MAKING REFRIGERATING TUBING. Leland H. Grenell, Dayton, Ohio, assignor to General Motors Corp., Detroit.

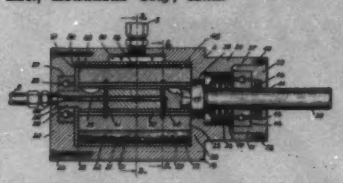
1. The method of manufacturing multiple passage tubing which comprises superimposing sheets with stop-weld material between adjacent sheets with the stop-weld material arranged in lengthwise stripes, roll-forging the sheets together, forming bends in the composite roll-forged sheet and then introducing a fluid under pressure within said sheets so as to separate the sheets along said stripes of stop-weld material while confining said sheet between rigid surfaces spaced from said sheet a distance equal to the expansion desired in the passageway.

2,845,780. FOOD SERVICE CART. William R. Conklin, Douglas G. Thom, and Blair H. Stentz, Murfreesboro, Tenn., assignors to The Swartzbaugh Mfg. Co., Murfreesboro, Tenn.



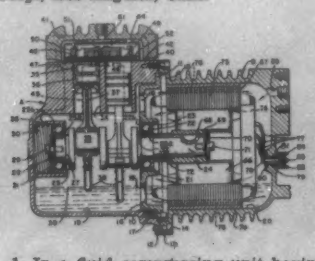
1. In a food service cart having a cold compartment with two sets of vertically spaced pairs of horizontal tray guides, the improvement comprising a vertical frame centrally located in said compartment and mounting the inner ones of the tray guides in said two sets of tray guides, a generally rectangular chill plate, means mounted between said sets of tray guides and near the top of said compartment and cooperating means on said chill plate for removably mounting said chill plate in vertical position between said sets of tray guides.

2,846,122. REFRIGERATION COMPRESSOR. Carl E. Backlyeft, Arkansas City, Kan., assignor to Acton Mfg. Co., Inc., Arkansas City, Kan.



A compressor for use in a refrigeration system using a suitable refrigerant gas and for maintaining suitable differential pressures therein when operated at a wide variety of speeds comprising, a casing having a cylindrical bore closed at both ends to form a cylindrical cavity therein, inlet and outlet passages in said casing, inlet and outlet ports communicating the inlet and outlet passages respectively with said bore. . . .

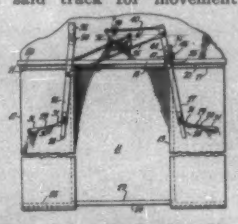
2,846,140. REFRIGERATION COMPRESSOR. James M. Kemper, Hollywood, Calif., assignor to The Garrett Corp., Los Angeles, Calif.



1. In a fluid compressing unit having pumping elements therein: walls forming a head chamber for collecting pumped fluid; valve means in said chamber for controlling discharge of fluid from said pumping elements; an imperforate dished cover in said chamber positioned over said valve means with its edge seated on a wall of said chamber to oppose flow of pumped fluid from said valve means into said head chamber. . . .

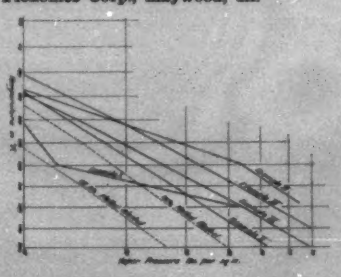
2,846,212. DOOR CONTROL MECHANISM FOR REFRIGERATED TRUCKS. William H. Murphy, Wilson, N. C.

1. A control mechanism for a pair of sliding doors associated with a door opening in an interior wall separating the refrigerated compartment of a refrigerated truck from the operator's cab comprising an elongated horizontal track supported on said wall above said opening, rollers journaled on each of said doors for suspending the doors from said track for movement in a



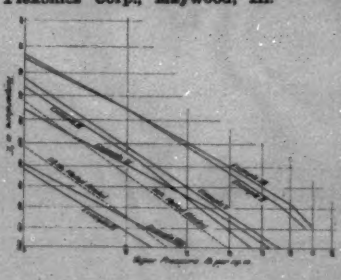
plane parallel and closely adjacent to said wall, a pair of first and second laterally spaced. . . .

2,846,395. CHARGING COMPOUND FOR THERMOSTATS. Melvin R. Arnold, Chicago, Ill., and Loren A. Bryan, Alexandria, Va., assignors to Plexonics Corp., Maywood, Ill.



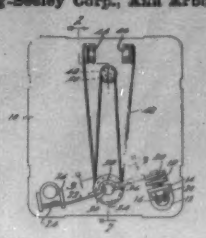
1. A temperature responsive charging composition for a thermostat and consisting essentially of ammonia, an acidic gas reversibly reactable with said ammonia, a reaction product of said ammonia with said acidic gas, and a solvent for dissolving each of said ammonia, said acidic gas and said reaction product. . . .

2,846,396. CHARGING FLUID FOR THERMOSTATS. Melvin R. Arnold, Arlington Heights, Ill., Loren A. Bryan, Alexandria, Va., and Carl S. Miner, Jr., Winnetka, Ill., assignors to Plexonics Corp., Maywood, Ill.



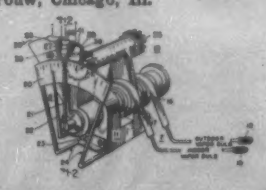
1. A temperature responsive charging composition for a thermostat and consisting essentially of a water soluble, reversibly heat-decomposable salt of a non-volatile weak acid with a volatile base, and acidic water soluble gas and a solvent for dissolving each of said salt and said acidic gas, said solvent being selected from the class consisting of water. . . .

2,846,543. THERMAL RELAY. Emil E. Sivacek, Ann Arbor, Mich., assignor to King-Seeley Corp., Ann Arbor, Mich.



1. A relay mechanism responsive to current flow in an input electrical circuit for controlling the current in an output electrical circuit comprising a base, first and second mateable electrical contacts connectable in the output circuit, means securing said second contact on said base, means supporting said first contact and tending to force said first contact into a preselected relationship with said second contact. . . .

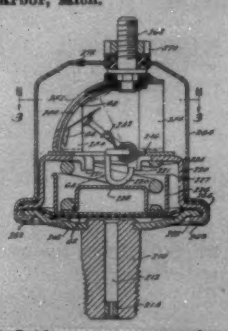
2,846,548. AIR-CONDITIONING-APPARATUS CONTROL-DEVICE. Max De Fouw, Chicago, Ill.



2. An air-conditioning-apparatus control-device comprising, a pair of concentrically-arranged shaft members, temperature-sensitive means connected to effect the relative rotation of the respective shaft members, switch mechanism for controlling the operation of the air-conditioning-apparatus, means on the respective shaft members connected to effect the opposite shifting of the switch mechanism to start and stop the operation of the air-conditioning-apparatus. . . .

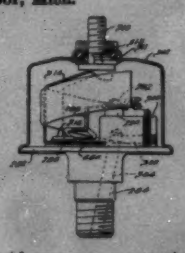
Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

2,846,549. PRESSURE INDICATING DEVICE. Leonard Boddy, Ann Arbor, Mich., assignor to King-Seeley Corp., Ann Arbor, Mich.



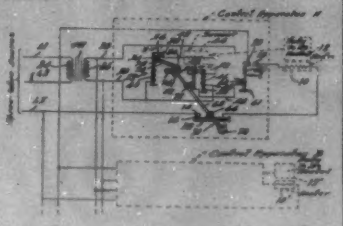
1. A fluid pressure responsive current modulating means comprising a cup-shaped member, a flexible diaphragm cover for said member, means connected to said member and defining a chamber one wall whereof is constituted by said diaphragm, means defining a passage for admitting pressure fluid to said chamber, a spring acting between the base of said cup-shaped member and said diaphragm. . . .

2,846,550. PRESSURE INDICATING DEVICE. Leonard Boddy, Ann Arbor, Mich., assignor to King-Seeley Corp., Ann Arbor, Mich.



1. A fluid pressure responsive current modulating means comprising a base member adapted for connection to a source of fluid pressure, a tube of the Bourdon type having one end anchored to said base and the other end free to move, said base defining a passage through which fluid under pressure is admitted to said tube, a resistance element supported by said base. . . .

2,846,556. TEMPERATURE CONTROLLING APPARATUS. George R. Whinery, Ann Arbor, Mich., assignor to King-Seeley Corp., Ann Arbor, Mich.



1. In a system associable with a source of electrical energy for controlling a heating means in heat transfer relationship with a body to be heated, the combination of a voltage step-down transformer having a primary and a secondary winding, said primary winding being energizable from the source, a self-interrupting thermal relay including a heater energizable by said secondary winding, a polymetallic element controlled by said heater. . . .

DESIGNS

183,307. REFRIGERATOR CABINET. Edwin O. Grahn, Birmingham, Mich., assignor to General Motors Corp., Detroit.

183,337. THERMOSTAT OR SIMILAR ARTICLE. Paul Wrablica, Jr., Corona, N. Y., assignor to Metals & Controls Corp., Attleboro, Mass.

Whirlpool Upgrades Customer Service

ST. JOSEPH, Mich.—Robert E. Brooker, president of Whirlpool Corp., announced that effective at once, customer services will become a function of his office.

Robert P. Lewis, director of customer relations for the past two years, will continue in that post.

Brooker also disclosed that the company has established a code of service ethics to govern its customer relations.

Brooker said, "We regard service as being basic to sales and believe that more and more decisions to buy are tied to satisfactory and economical service performed on appliances in customers' homes.

"Not only do we believe a well run service department is essential to selling appliances, we believe it can be profitable in every distributorship. In order to reap the greatest reward from service, distributors and dealers must have a part in making it work. . . .

"In order to assure RCA Whirlpool customers of economical, prompt, and courteous service, we have established a code of service ethics which carries through dealers, distributors, manufacturing, and engineering divisions and both begins and ends with the corporate service function. We are convinced this is the way to greater profits, both from sales and from service," Brooker concluded.

DISTRICT SALES ENGINEER

Must have experience selling packaged air conditioning, liquid chillers and central type air conditioning. Must travel Alabama and Georgia, dealer contacts. Salary, commission, expenses, car furnished. Write Director of Sales, CURTIS Manufacturing Company, Refrigeration Division, St. Louis 20, Missouri. Give complete information first letter.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications $10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

GRADUATE ENGINEER—15 years' experience in design and testing of refrigerated products—milk coolers, water coolers, food freezers, x-ray film developing cabinets, etc. Design with emphasis on economics of manufacture without sacrifice of essential quality of product. Particularly experienced in application of cap tube systems. BOX A6112, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

SERVICE REPRESENTATIVE—Acme Industries, Inc. needs a salesminded regional service representative who has proven experience and knowledge in commercial and industrial air conditioning and refrigeration equipment. This position is an outstanding opportunity for the right person, who will headquarter in Houston and cover the South and Southwestern states. Write giving full details of your background and experience to John P. Campbell, personnel director, ACME INDUSTRIES, INC., Jackson, Michigan. All replies held in strictest confidence.

AIR CONDITIONING and commercial refrigeration installation and service. Experienced. Service trouble shooter, knowledge of control systems. Good working conditions, hospitalization and other benefits—salary commensurate with ability—Year round employment. Give reference, employment resume, age and physical condition. AARON TORCH & SONS, INC.—452 First St.—Macon, Georgia.

PUBLICITY MANAGER wanted—Prefer man 30-38 with broad publicity and advertising background in air conditioning-refrigeration field. Experience should include semi-technical editing and writing, press contact work, staging shows and exhibits. Send resume to Staff Employment, THE TRANE COMPANY, La Crosse, Wisconsin.

WANTED—SCOTSMAN service man, thoroughly familiar with flake and cube machines. In reply state employment last five years, also what experience with other makes of ice machines. Advise if any experience with carbonation drink dispensers. Reply attention MR. GREEN, P. O. Box 4327, Tampa, Florida.

HAVE OPENING for qualified field representative capable of appointing distributors, helping them plan stores, and serving existing customers. Territory Illinois, Wisconsin, Iowa, Indiana. Not necessary live in the Chicago area; could work from central Illinois or Indiana. Present representative being promoted, creating this opportunity with a fast-growing company. Write WARREN REFRIGERATORS, P. O. Box 1436, Atlanta, Georgia.

MANUFACTURERS' AGENTS wanted to set up dealers for central air conditioning equipment, and assemblers for ventilating equipment—residential and commercial. Specify desired territory. Call or write—WHIRLWIND MFG. CO.—G. W. Duke—3530 Clinton Drive, Houston, Texas.

FIELD SERVICE engineer wanted for the eastern part of the United States. Age under 40. Position pays salary and expenses, provides insurance, hospitalization, and vacation with pay. Applicant must be free to travel in a limited territory. Good personality, 10 years of commercial installation and service experience is required, including working knowledge of electricity. Give full details of your background and experience and enclose small professional photograph and telephone number in first letter of application. Give five references. BOX A6108, Air Conditioning & Refrigeration News.

REFRIGERATION & Air conditioning service executive. A man with a background of extensive service and engineering experience particularly geared to handle a service organization of 50 men. A contract with an excellent salary available. New York metropolitan area. Replies confidential. BOX A6111, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

AJAX ICE machine parts—New and rebuilt parts available. EVergreen 2-6333. AJAX PHILADELPHIA, INC., 3617 Lancaster Avenue, Phila. 4, Pa.

NOTICE: DISTRIBUTORS, dealers, service men, users refrigeration equipment—repair parts available all models Baker ammonia and Freon compressors. We are exclusive Baker export sales office. Manufacturers' export agents refrigeration, air conditioning, and allied equipment. THE KEISER COMPANY, Paul Building, Utica, New York.

MODEL HH 2 h.p. automobile air conditioning compressors tapered shaft, vertical mount, complete with flywheel $38.95. Send for free circulars and catalogs on money saving refrigeration & air conditioning parts and supplies. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

Los Angeles Code Proposals--

(Concluded from Page 1, Col. 5)

officer, the council, and the Mayor for adoption as an ordinance. It was also studied by the general committee of the heating and refrigeration code industry advisory committee at a meeting on Oct. 1.

Under the "authorized installers" heading, the board added a new paragraph which permits a master plumber and a journeyman plumber to install warm air heating devices not requiring ductwork.

Reason given for the addition is that such installations are within the scope of the plumbers' qualifications.

As previously reported in the NEWS, the advisory committee proposal requiring the signature of a registered professional mechanical engineer on plans and specifications was modified to cover larger installations of heating, ventilating, or air conditioning equipment.

Repair and maintenance jobs up to $100 will not require a permit. The advisory committee had proposed $50. The $100 figure is in line with other parts of the building code.

The board reported it had found three items the subject of disagreement among different segments of the industry.

Since the code in general meets with approval the board decided it would be better to submit it to the Mayor and council for ordinance enactment without these items which might delay ultimate enactment.

Here are the items removed from the code and referred back to the advisory committee:

Requirements for permits and inspection of evaporative coolers. Equipment of this type now requires an electrical permit. To add a requirement for a heating permit would involve an extra inspection and add to personnel requirements of the Heating & Refrigeration Div. which the board deemed inappropriate at this time.

Requirements for the installation of vents on heaters legally installed in existing buildings were removed. The reason given is that it is specified definitely unvented heaters may be installed in existing occupancies in accordance with present practice.

Prohibition against use of tinplate for metal ducts in residential heating systems, and the requirement for one inch of insulation in residential heating systems. Reasons for removal from the code are to limit necessity for board approvals, liberalize duct requirements in residential heating systems, and simplify inspection of ducts without lowering standards by eliminating certain hard to enforce requirements.

Arthur G. Clark, assistant chief of the Mechanical Bureau, said a proposed revised refrigeration code will not come before the board for action for several weeks.

Long Funeral Procession Marks Winther Burial

SAN FRANCISCO—Many attended services and took part in the long funeral procession for Arvid H. Winther, 53, following his tragic death Sept. 23.

Arvid was service manager and a vice president of Ray Winther Co. of which his brother Ray is president and founder. The company, which has headquarters in South San Francisco and sales and service locations in San Jose, Oakland, and Novato, is a distributor for Hussmann Refrigeration, Carrier Corp., and Daley Fixtures.

Arvid Winther was reported to be subject to severe coughing spells. Shortly after 7 p.m. his car plunged 250 yards down an embankment from the intersection of Skyline Blvd. and Sharp Park Freeway, and caught fire. He was dead when help reached his flaming auto.

MARSH
Instruments

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.
PRESSURE GAUGES and Dial Thermometers for all services.
MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves.
MARSH INSTRUMENT COMPANY
Sales Affiliate of Jas. P. Marsh Corporation
Dept. D, Skokie, Ill.

Europeans Study ARI Organization

WASHINGTON, D. C. — The Air-Conditioning & Refrigeration Institute was selected as one of the "most active and progressive American manufacturers' trade associations," for a visit by 16 European trade association executives as part of a project of the European Productivity Agency for the training of European manufacturers' trade association activities.

Airtrol Supply Holds Open House

CORPUS CHRISTI, Texas— On Oct. 11-12, Airtrol Supply, Inc. will hold an open house for customers and manufacturing accounts at its new location, 2701 Agnes St., according to Harry Samuels, president.

The firm has been a wholesaler here for the past 12 years. It formerly operated at 1315 Agnes St. under the name of South Texas Refrigeration Supply.

In past years, the company handled primarily only refrigeration parts. However, it now handles boilers, supply and exhaust equipment, and sheet metal and heating supplies.

The firm's name was changed when it moved into the new building earlier this year, Samuels pointed out, "as we felt that Airtrol would denote the treatment and control of air and would more closely describe our organization's activities."

The new building has over 7,000 sq. ft. of space, with 50% devoted to sales area and display. The display area is greater than the entire area available at the old location. By Jan. 1, the company hopes to add an additional 3,000 sq. ft. of warehouse space.

Personnel, including Vernon Plocek, refrigeration parts manager, is the same as with the old company, Samuels noted. Two additional salesmen have been employed.

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